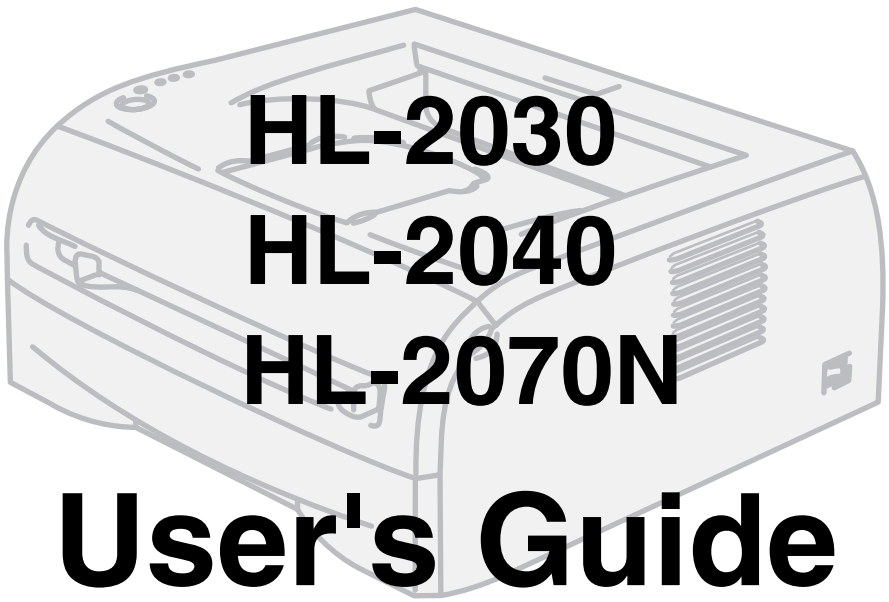
Brother Laser Printer



HL-2030
HL-2040
HL-2070N

User's Guide

You must set up the hardware and install the driver before you can use the printer.

Please use the Quick Setup Guide to set up the printer. You can find a printed copy in the box.

Please read this User's Guide thoroughly before you use the printer. Keep the CD-ROM in a convenient place so you can use it quickly if you need to.

Please visit our web site at http://solutions.brother.com where you can get answers to Frequently Asked Questions (FAQs), Product Support and Technical Questions, and the latest Driver Updates and Utilities.

Version 0

Laser printer

HL-2000 series

User's Guide

Safety precautions

We use the following icons throughout this User’s Guide:

Warnings tell you what to do to prevent possible personal injury.

Electrical Hazard icons alert you to a possible electrical shock.

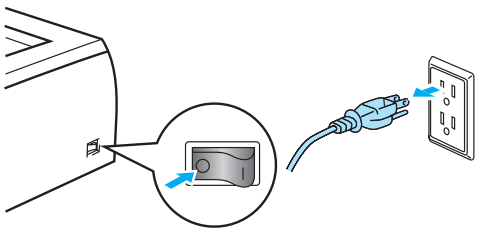
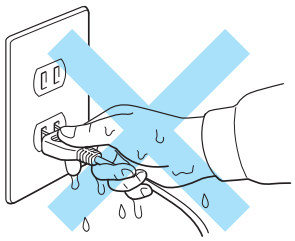
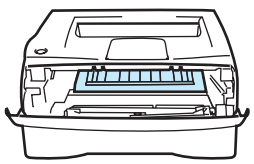
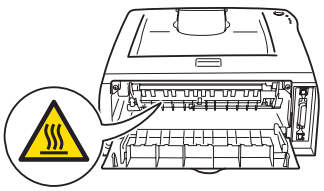
Hot Surface icons warn you not to touch machine parts that are hot.

Cautions specify procedures you must follow or avoid to prevent possible damage to the printer or other objects.

Improper Setup icons alert you to devices and operations that are not compatible with the printer.

Notes tell you how you should respond to a situation that may arise or give tips about how the current operation works with other features.

To use the printer safely

⚠	There are high voltage electrodes inside the printer. Before you clean the inside of the printer, make sure you have turned off the power switch and unplugged the printer from the AC power outlet.	
	Do not handle the plug with wet hands. Doing this might cause an electrical shock.	
	After you have just used the printer, some internal parts of the printer are extremely hot. When you open the front or back cover of the printer, never touch the shaded parts shown in the illustration.	 Inside the printer (Front View) Open the back cover (Back View)
	The fuser unit is marked with a caution label. Please do not remove or damage the label.	
	Do not use a vacuum cleaner to clean up scattered toner. Doing this might cause the toner dust to ignite inside the vacuum cleaner, potentially starting a fire. Please carefully clean the toner dust with a dry, lint-free cloth and dispose of it according to local regulations.	

CAUTION

Cleaning the outside of the printer:

- Make sure you have turned off the power switch and unplugged the printer from the AC power outlet.
- Use neutral detergents. Cleaning with volatile liquids such as thinner or benzine will damage the outside surface of the printer.
- Do not use cleaning materials that contain ammonia.

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Shipment of the Printer

If for any reason you must ship your Printer, carefully package the Printer to avoid any damage during transit. We recommend that you save and use the original packaging. The Printer should also be adequately insured with the carrier.

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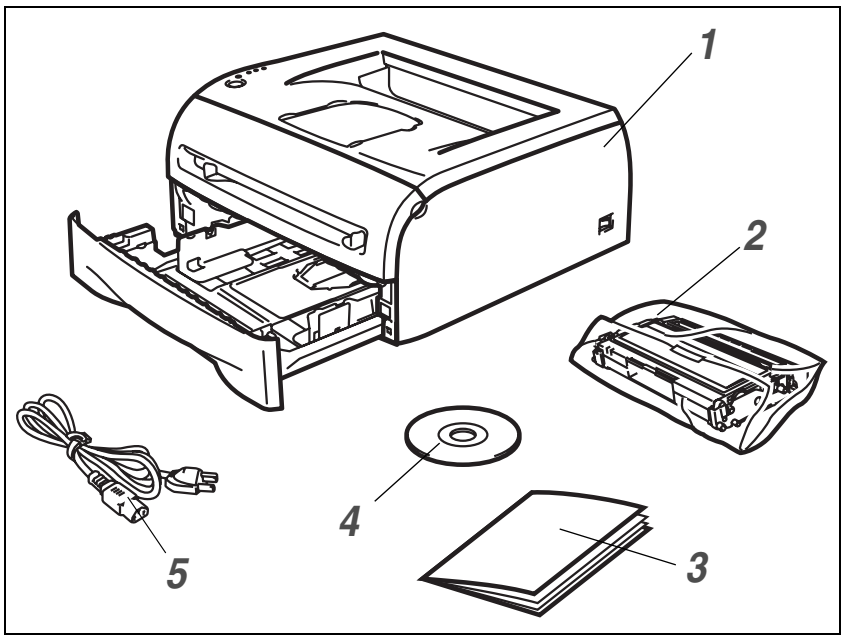
1 About this printer

What is in the box?

When you unpack the printer, check that you have all of the following parts.



1 Printer
2 Drum unit and toner cartridge assembly
3 Quick Setup Guide
4 CD-ROM
5 AC power cord

Parts may vary from one country to another.

Note

The AC power cord may be slightly different than the one in the illustration above, depending on which country you bought the printer in.

Interface cable

The interface cable is not a standard accessory. Please purchase the appropriate interface cable for the interface you intend to use (USB, Parallel or Network).

- USB cable

  Do not use a USB interface cable that is longer than 6 feet (2.0 meters).

  Do not connect the USB cable to a non-powered hub or a Mac® keyboard.

  When you use a USB cable, make sure you connect it to the USB connector of your PC.

  USB is not supported under Windows® 95 or Windows NT®4.0.

- Parallel interface (For HL-2040 and HL-2070N)

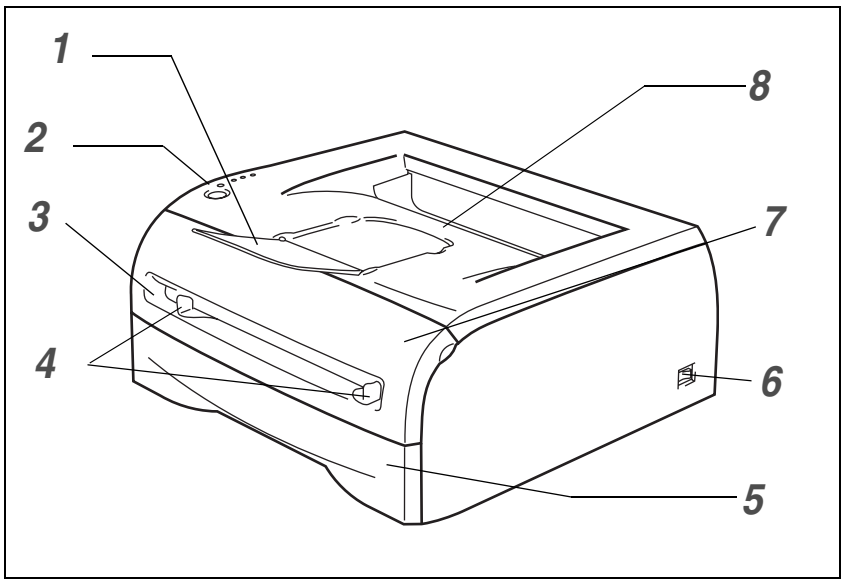
  Do not use a Parallel interface cable that is longer than 6 feet (2.0 meters).

  Use a shielded interface cable that is IEEE 1284-compliant.

- Network cable (For HL-2070N)

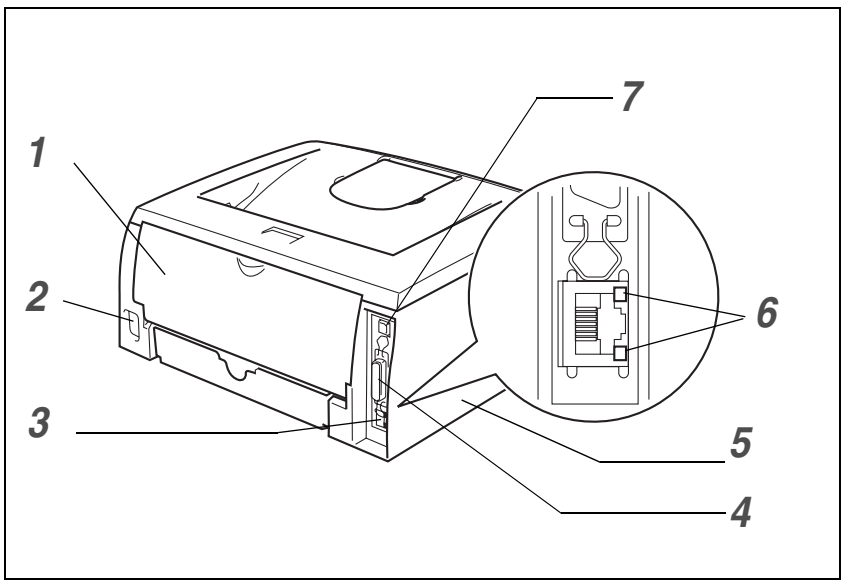
  Use a straight-through Category5 (or greater) twisted-pair cable for 10BASE-T or 100BASE-TX Fast Ethernet Network.

Front view



1 Face-down Output Tray Support Flap (Support Flap)
2 Control Panel
3 Manual Feed slot
4 Manual Feed Paper Guides
5 Paper Tray
6 Power Switch
7 Front Cover
8 Face-down Output Tray

Back view



1 Back Cover
2 AC Power Connector
3 10/100BASE-TX Port (HL-2070N)
4 Parallel Interface Connector (HL-2040 and HL-2070N)
5 Side Cover
6 LED (Light-emitting Diode) (HL-2070N)
7 USB Interface Connector

The printer illustration is based on HL-2070N.

Positioning the printer

Please read the following before you use the printer.

Power supply

Use the printer within the recommended power range.

Power source:	USA and Canada:	AC 110 to 120 V, 50/60 Hz
	Europe and Australia:	AC 220 to 240 V, 50/60 Hz

The power cord, including extensions, should not be longer than 5 meters (16.5 feet).

Do not share the same power circuit with other high-power appliances, such as an air conditioner, copier, shredder and so on. If you cannot avoid using the printer with these appliances, we recommend that you use a voltage transformer or a high-frequency noise filter.

Use a voltage regulator if the power source is not stable.

Environment

- You should setup the printer near a power outlet that you can easily reach, so that it can be easily unplugged from the power outlet if there is an emergency.
- Only use the printer within the following ranges of temperature and humidity:

Temperature: 10 °C to 32.5 °C (50 °F to 90.5 °F)

Humidity: 20% to 80% (without condensation)

- You should use the printer in a well-ventilated room.
- Put the printer on a flat, horizontal surface.
- Keep the printer clean. Do not put the printer in a dusty place.
- Do not put the printer where the ventilation hole of the printer is blocked. Keep a gap of approximately 100 mm (4 in.) between the ventilation hole and the wall.
- Do not put the printer in direct sunlight. If you have to put it near a window, use a blind or a heavy curtain to protect the printer from direct sunlight.
- Do not put the printer near devices that contain magnets or generate magnetic fields.
- Do not subject the printer to strong physical shocks or vibrations.
- Do not expose the printer to open flames, salty or corrosive gasses.
- Do not put objects on top of the printer.
- Do not put the printer near an air conditioner.
- Keep the printer horizontal when you carry it.

What kind of paper can I use?

Type and size of paper

The printer loads paper from the installed paper tray, or the manual feed slot.

The names for the paper trays in the printer driver and this guide are as follows:

Paper tray	**Tray 1**
Manual feed slot	**Manual**

While looking at this page on the CD-ROM, you can jump to the page for each printing method by clicking ⓘ in the table.

Media type	Tray 1	Manual	Select the Media type from the printer driver
Plain paper 60 g/m^2 to 105 g/m^2 (16 to 28 lb)	ⓘ	ⓘ	**Plain Paper**
Recycled paper	ⓘ	ⓘ	**Recycled Paper**
Bond paper	ⓘ	ⓘ	**Bond Paper**
Thick paper 105 g/m^2 to 161 g/m^2 (28 to 43 lb)		ⓘ	**Thick Paper** or **Thicker Paper**
Transparency	ⓘ Up to 10 sheets A4 or Letter	ⓘ A4 or Letter	**Transparencies**
Labels		ⓘ A4 or Letter	**Thicker Paper**
Envelopes		ⓘ	**Envelopes** **Env. Thin** **Env. Thick**

	Tray 1	Manual
Paper size	A4, Letter, Legal*, B5(JIS), B5(ISO), Executive, A5, A6, B6(ISO)	Width: 69.9 to 215.9 mm (2.75 to 8.5 in.) Length: 116 to 406.4 mm (4.57 to 16 in.)
Number of sheets	250 sheets (80 g/m^2 or 21 lb)	Single sheet

* Legal paper is not available in some regions.

Recommended paper

	Europe	USA
Plain paper	Xerox Premier 80 g/m^2 Xerox Business 80 g/m^2 Modo DATACOPY 80 g/m^2 IGEPA X-Press 80 g/m^2	Xerox 4200DP 20 lb Hammermill Laser Paper 24 lb
Recycled paper	Xerox Recycled Supreme 80 g/m^2	N/A
Transparency	3M CG3300	3M CG3300
Labels	Avery laser label L7163	Avery laser label #5160

- Before you buy a lot of paper, please test a small quantity to make sure that the paper is suitable.
- Use paper that is made for plain-paper copying.
- Use paper that is 75 to 90 g/m^2 (20 to 24 lb).
- Use neutral paper. Do not use acidic or alkaline paper.
- Use long-grain paper.
- Use paper with a moisture content of approximately 5%.
- This printer can use recycled paper that meets DIN 19309 specification.

CAUTION

Do not use ink jet paper, because it might cause a paper jam or damage your printer.

Note

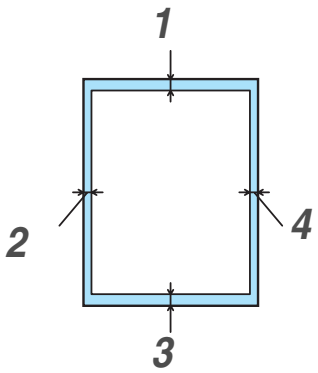
If you use paper other than the ones recommended, a paper jam or misfeeding may occur in the printer.

To help you choose which paper to use with this printer, see *Important information for choosing your paper* on page A-6.

Printable area

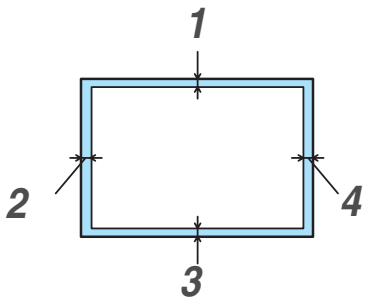
The edges of the paper that cannot be printed on are shown below.

Portrait



	A4	Letter	Legal	B5 (ISO)	Executive	A5	A6	B6
1	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)
2	6.01 mm (0.24 in.)	6.35 mm (0.25 in.)	6.35 mm (0.25 in.)	6.01 mm (0.24 in.)	6.35 mm (0.25 in.)	6.01 mm (0.24 in.)	6.01 mm (0.24 in.)	6.01 mm (0.24 in.)
3	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)
4	6.01 mm (0.24 in.)	6.35 mm (0.25 in.)	6.35 mm (0.25 in.)	6.01 mm (0.24 in.)	6.35 mm (0.25 in.)	6.01 mm (0.24 in.)	6.01 mm (0.24 in.)	6.01 mm (0.24 in.)

Landscape



	A4	Letter	Legal	B5 (ISO)	Executive	A5	A6	B6
1	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)
2	5.0 mm (0.19 in.)	5.08 mm (0.2 in.)	5.08 mm (0.2 in.)	5.0 mm (0.19 in.)	5.08 mm (0.2 in.)	5.0 mm (0.19 in.)	5.0 mm (0.19 in.)	5.0 mm (0.19 in.)
3	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)	4.23 mm (0.16 in.)
4	5.0 mm (0.19 in.)	5.08 mm (0.2 in.)	5.08 mm (0.2 in.)	5.0 mm (0.19 in.)	5.08 mm (0.2 in.)	5.0 mm (0.19 in.)	5.0 mm (0.19 in.)	5.0 mm (0.19 in.)

Printing methods

Printing on plain paper, bond paper and transparencies

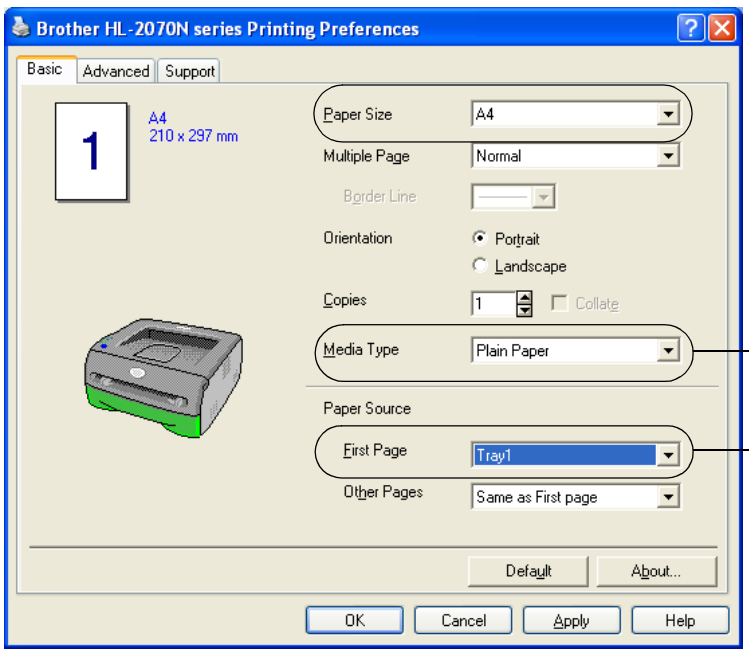
You can print on plain paper, bond paper or transparencies from the paper tray or manual feed slot. For the paper you want to use, see *What kind of paper can I use?* on page 1-4.

Printing on plain paper, bond paper or transparencies from the paper tray

Note

Do not put more than 10 transparencies in the paper tray, if you print on transparencies.

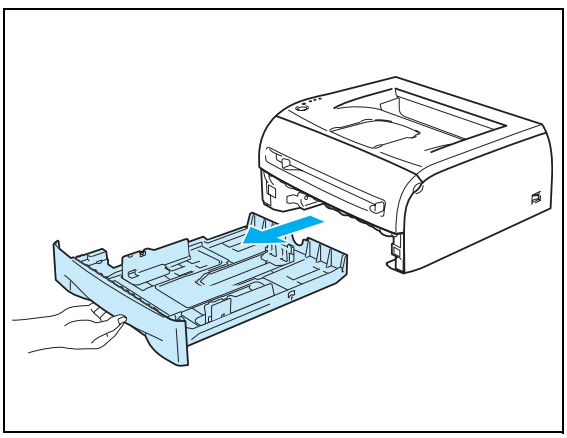
1. Select the **Paper Size**, **Media Type**, **Paper Source** and other settings in the printer driver.



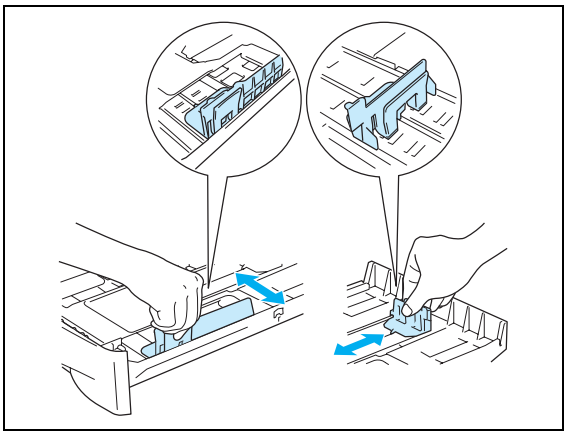
Select **Plain Paper**, **Bond Paper** or **Transparencies**.

Select **Tray1**.

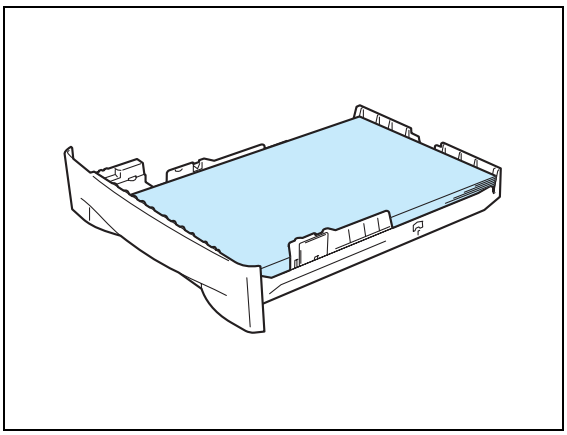
2. Pull the paper tray completely out of the printer.



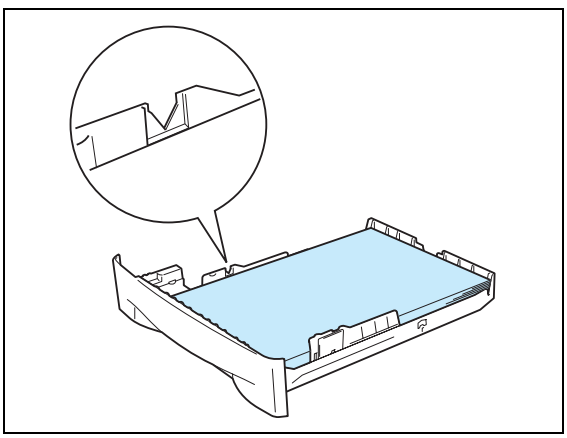
3 While pressing the blue paper-guide release lever, slide the paper guides to fit the paper size. Check that the guides are firmly in the slots.



4 Put paper in the tray.



5 Check that the paper is below the maximum paper mark (▼).

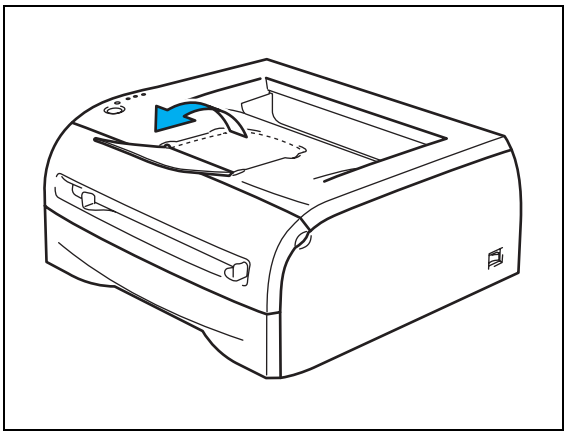


Note

- Paper jams may occur if you put more than 250 sheets (80 g/m^2 or 21 lb) of plain or bond paper in the paper tray at any one time.
- Paper jams may occur if you put more than 10 transparencies in the paper tray at any one time.
- When you use pre-printed paper, put the side that is going to be printed on (blank side) face down, with the top of the paper at the front of the tray.

6 Put the paper tray firmly back in the printer. Check that it is completely in the printer.

7 Lift up the support flap to prevent paper from sliding off the face-down output tray.



Note

If you choose not to lift up the output tray support flap, we recommend that you remove printed pages immediately after they come out of the printer.

8 Send the print data to the printer.

Note

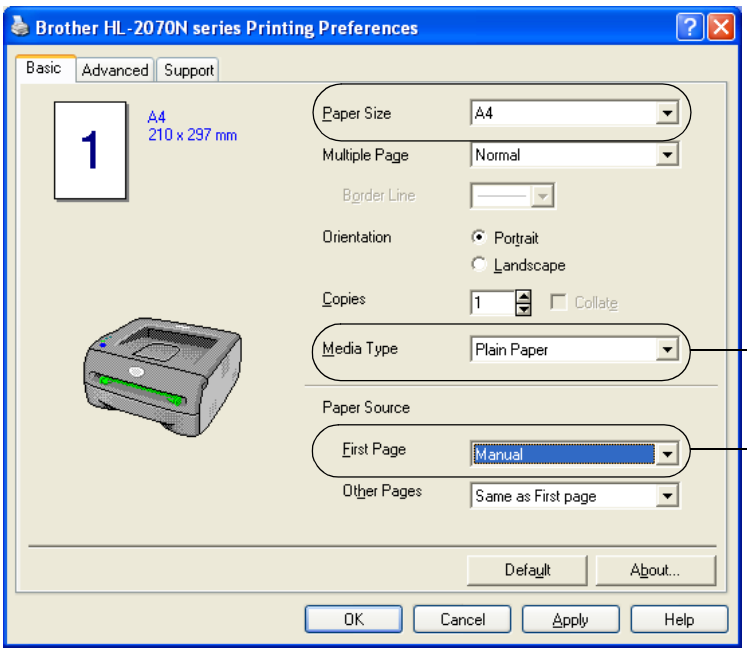
If you print on transparencies, remove each transparency immediately. Stacking the printed transparencies may cause a paper jam or the transparency to curl.

Printing on plain paper, bond paper or transparencies from the manual feed slot

Note

The printer automatically turns on the Manual Feed mode when you put paper in the manual feed slot.

1. Select the **Paper Size**, **Media Type**, **Paper Source** and other settings in the printer driver.



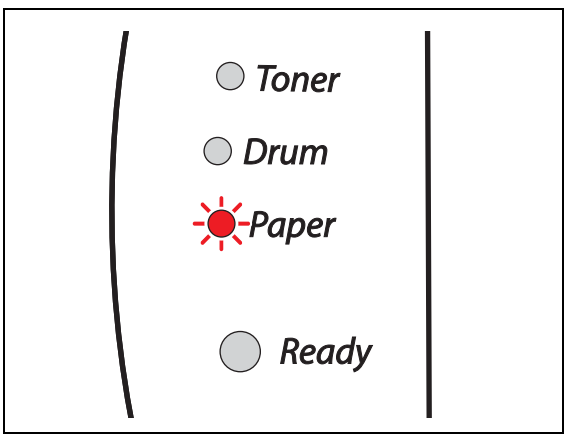
Select **Plain Paper**, **Bond Paper** or **Transparencies**.

Select **Manual**.

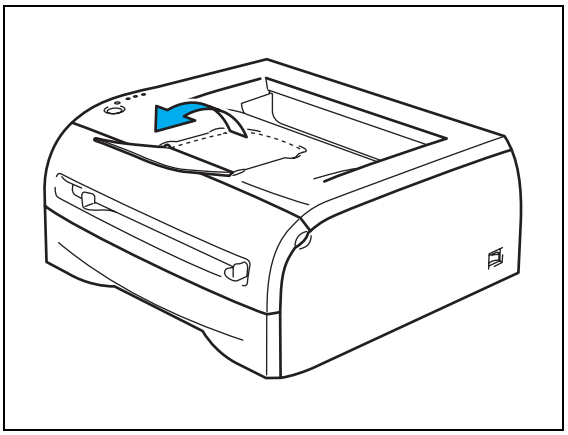
2. Send the print data to the printer.

Note

A **No paper fed manual feed slot** status is shown by the control panel LEDs until you put a sheet of paper or a transparency in the manual feed slot.



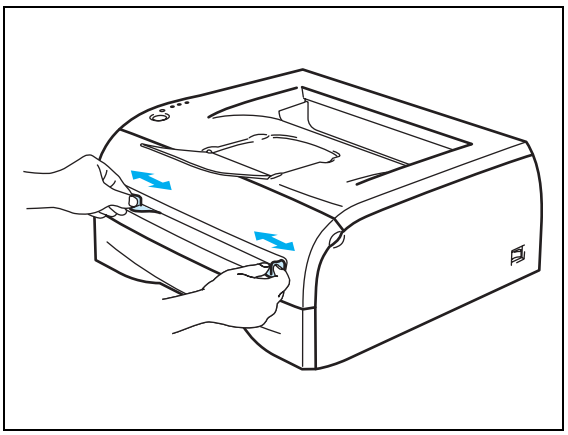
3 Lift up the support flap to prevent paper from sliding off the face-down output tray.



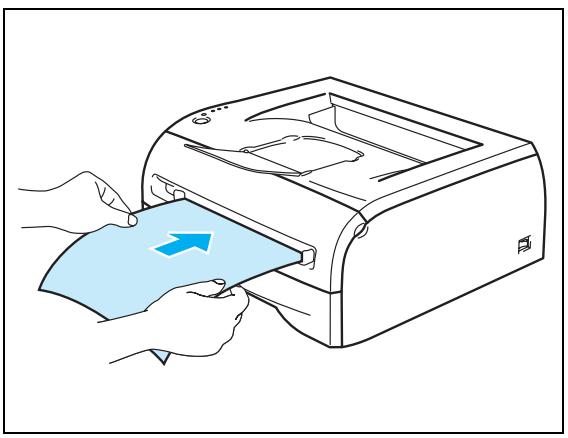
Note

If you choose not to lift up the output tray support flap, we recommend that you remove printed pages as soon as they come out of the printer.

4 Using both hands, slide the manual feed slot paper guides to the width of the paper that you are going to use.



5 Using both hands, put one piece of paper or one envelope in the manual feed slot until the front edge of the paper or envelope touches the paper feed roller. When you feel the machine pull in the paper, let go.



Note

- Put the paper into the manual feed slot with the side to be printed face up.
- Make sure that the paper or transparency is straight and in the proper position on the manual feed slot. If it is not, the paper or the transparency may not be fed properly, resulting in a skewed printout or a paper jam.
- Do not put more than one piece of paper in the manual feed slot at any one time, as it may cause a jam.
- If you put any Media (paper, transparency and so on) in the manual feed slot before the printer is in the Ready state, the media may be ejected without being printed on.

6 After the printed page comes out of the printer, put in the next sheet of paper or the transparency as in Step 5 above. Repeat for each page that you want to print.

Note

If you print on transparencies, remove each transparency immediately after printing. Stacking the printed transparencies may cause a paper jam or the transparency to curl.

Printing on thick paper, labels and envelopes

Note

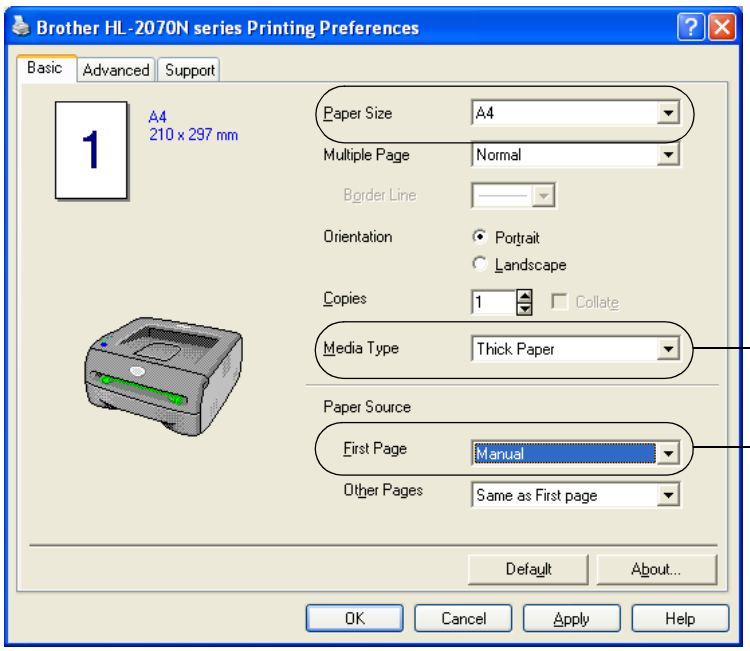
The printer automatically turns on the Manual Feed mode when you put paper in the manual feed slot.

When you select the paper you want to use, see *What kind of paper can I use?* on page 1-4.

If you print on envelopes, see *Types of envelopes to avoid* on page 1-16.

Printing on thick paper, labels and envelopes from the manual feed slot

1. Select the **Paper Size**, **Media Type**, **Paper Source** and other settings in the printer driver.



Select **Thick paper**, **Thicker paper**, or **Envelopes**.

Select **Manual**.

Note

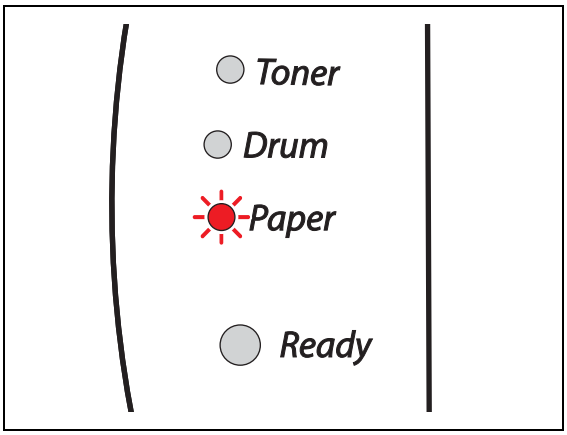
For envelope users

- When you use Envelope #10, select **Com-10** from Paper Size in the printer driver.
- For other envelopes which are not in the selection of the printer driver, such as Envelope #9 or Envelope C6, use **User Defined...** Size. For more information on the envelope size, see *Paper size* on page A-8.

2 Send the print data to the printer.

Note

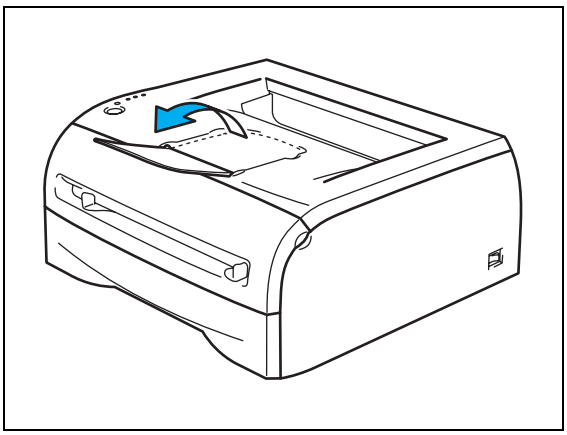
A **No paper fed manual feed slot** status is shown by the control panel LEDs until you put a sheet of paper or an envelope in the manual feed slot.



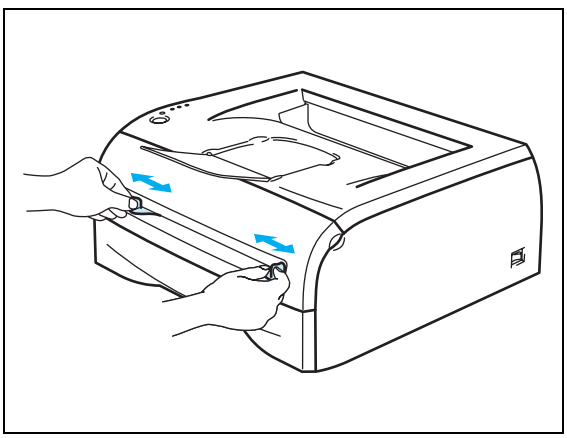
3 Lift up the support flap to prevent paper from sliding off the face-down output tray.

Note

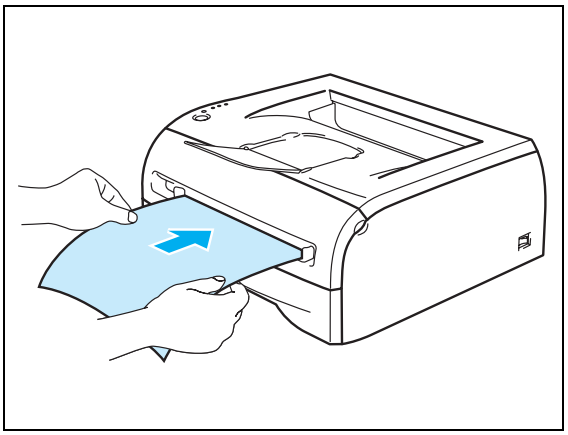
If you choose not to lift up the output tray support flap, we recommend that you remove printed pages as soon as they come out of the printer.



4 Using both hands, slide the manual feed slot paper guides to the width of the paper that you are going to use.



5 Using both hands, put one piece of paper or one envelope in the manual feed slot until the front edge of the paper or envelope touches the paper feed roller. When you feel the machine pull in the paper, let go.



Note

- Put the paper into the manual feed slot with the side to be printed face up.
- Make sure that the paper or the envelope is straight and in the proper position in the manual feed slot. If it is not, the paper or envelope may not be fed properly, resulting in a skewed printout or a paper jam.
- Do not put more than one piece of paper or one envelope in the manual feed slot at any one time, as it may cause a jam.
- If you put any Media (paper, envelope and so on) in the manual feed slot before the printer is in the Ready state, the media may be ejected without being printed on.

6 After the printed page comes out of the printer, put in the next sheet of paper or the envelope as in Step 5 above. Repeat for each page that you want to print.

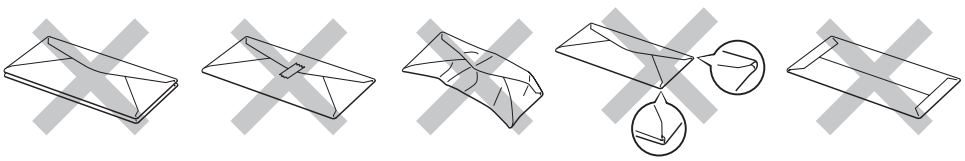
Note

- Envelope joints that are sealed by the manufacturer should be secure.
- All sides of the envelope should be properly folded without wrinkles or creases.
- Remove each sheet or envelope immediately after printing. Stacking the sheets or envelopes may cause the paper to jam or curl.

Types of envelopes to avoid

Do not use envelopes:

- that are damaged, curled, wrinkled, or unusual shape
- that are extremely shiny or textured
- with clasps, snaps or tie strings
- with self-adhesive closures
- that are of a baggy construction
- that are not sharply creased
- that are embossed (have raised writing on them)
- that were previously printed by a laser printer
- that are pre-printed on the inside
- that cannot be arranged when put in a pile
- that are made of paper that weighs more than the paper weight specifications for the printer
- that have been badly made, with edges that are not straight or consistently square
- with windows, holes, cutouts or perforations



IF YOU USE ANY OF THE TYPES OF ENVELOPES LISTED ABOVE, THEY MAY DAMAGE YOUR PRINTER. THIS DAMAGE IS NOT COVERED UNDER ANY BROTHER WARRANTY OR SERVICE AGREEMENT.

Note

- Do not put different types of paper in the paper tray at the same time because it may cause paper jams or misfeeds.
- Do not print envelopes using duplex printing.
- For proper printing, you must choose the same paper size from your software application as the paper in the tray.
- See *What kind of paper can I use?* on page 1-4.

Most envelopes will be suitable for your printer. However, some envelopes will have feed and print-quality problems because of the way they have been made. A suitable envelope should have edges with straight, well-creased folds and the leading edge should not be thicker than two pieces of paper. The envelope should lie flat and not be of baggy or flimsy construction. You should buy quality envelopes from a supplier who understands that you will be using the envelopes in a laser printer. Before you print a lot of envelopes, test one to make sure that the print results are what you want.

Note

Brother will not recommend a particular envelope because envelope manufacturers may change the envelope specifications. You are responsible for the quality and performance of the envelopes you use.

Duplex Printing

The supplied printer drivers for Windows® 95/98/Me, Windows NT® 4.0 and Windows® 2000/XP all allow manual duplex printing. For more information about how to choose the settings, see the **Help** text in the printer driver.

Guidelines for printing on both sides of the paper

- If the paper is thin, it may wrinkle.
- If paper is curled, straighten it and then put it back in the paper tray or the manual feed slot.
- If the paper is not feeding properly, it may be curled. Remove the paper and straighten it.
- When you use the manual duplex function, it is possible that there may be paper jams or poor print quality. If there is a paper jam, see *Paper jams and how to clear them* on page 6-5.

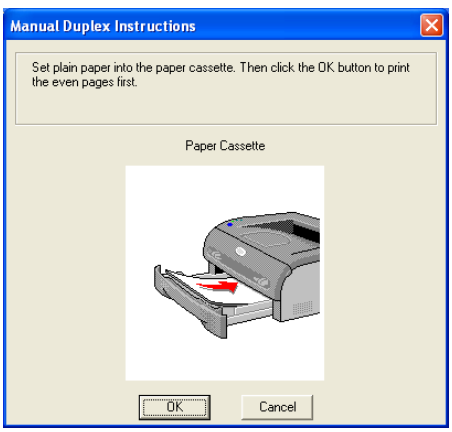
Printing on both sides of the paper (manual duplex printing)

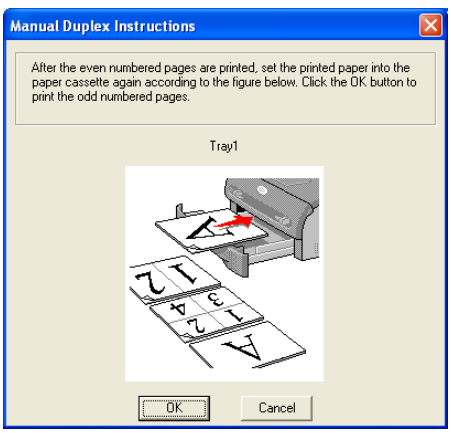
Note

You should use plain paper and recycled paper. Do not use bond paper.

Manual duplex printing from the paper tray

1. From the **Advanced** tab choose the **Manual Duplex** printing mode, and from the **Basic** tab choose the **Paper Source** to be **Auto Select** or **Tray1**.
2. The printer will automatically print all the even-numbered pages on one side of the paper first.
3. Remove the printed even-numbered pages from the output tray and put them back in the paper tray, placing the paper with the side that is going to be printed on (blank side) face down. Follow the instructions on the computer screen.


Manual Duplex Instructions
Set plain paper into the paper cassette. Then click the OK button to print the even pages first.
Paper Cassette
OK
Cancel


Manual Duplex Instructions
After the even numbered pages are printed, set the printed paper into the paper cassette again according to the figure below. Click the OK button to print the odd numbered pages.
Tray1
OK
Cancel

4 The printer will now automatically print all the odd-numbered pages on the other side of the paper.

Note

When you put paper in the paper tray, first empty the tray then put the printed pages in the tray, with the printed side face up. (Do not add the printed pages to the top of a stack of unprinted paper.)

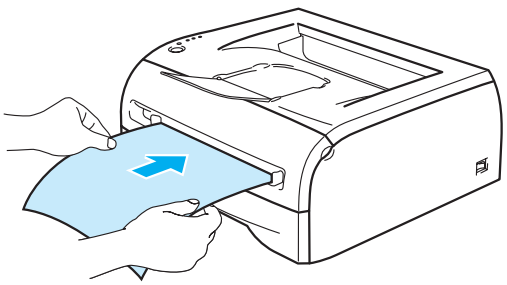
Manual duplex printing from the manual feed slot

Note

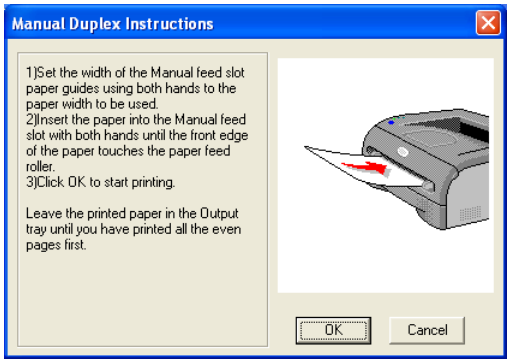
You should not use very thin or very thick paper.

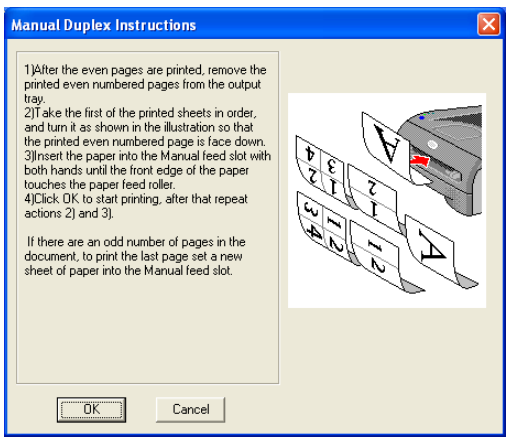
1 From the **Advanced** tab choose the **Manual Duplex** printing mode, and from the **Basic** tab choose the **Paper Source** to be **Manual** feed.

2 Using both hands put the paper in the manual feed slot with the side that is going to be printed on first facing up. Follow the instructions on the computer screen. Repeat this step until you have printed all the even-numbered pages.



3 Remove the printed even-numbered pages from the output tray and put them back into the manual feed slot in the same order one by one. Place the paper with the side that is going to be printed on (the blank side) face up. Follow the instructions on the computer screen.


Manual Duplex Instructions
1)Set the width of the Manual feed slot paper guides using both hands to the paper width to be used.
2)Insert the paper into the Manual feed slot with both hands until the front edge of the paper touches the paper feed roller.
3)Click OK to start printing.
Leave the printed paper in the Output tray until you have printed all the even pages first.
OK
Cancel


Manual Duplex Instructions
1)After the even pages are printed, remove the printed even numbered pages from the output tray.
2)Take the first of the printed sheets in order, and turn it as shown in the illustration so that the printed even numbered page is face down.
3)Insert the paper into the Manual feed slot with both hands until the front edge of the paper touches the paper feed roller.
4)Click OK to start printing, after that repeat actions 2) and 3).
If there are an odd number of pages in the document, to print the last page set a new sheet of paper into the Manual feed slot.
OK
Cancel

4 Repeat Step 3 until you have printed all the odd-numbered pages on the other side of the paper.

Paper orientation for manual duplex printing

The printer prints the second page first.

If you print 10 pages on 5 sheets of paper, it will print page 2 then page 1 on the first sheet of paper.

It will print page 4 then page 3 on the second sheet of paper.

It will print page 6 then page 5 on the third sheet of paper, and so on.

When doing manual duplex printing, the paper must be put in the paper tray in the following way:

- For the manual feed slot:

  Put the side to be printed on first, face-up, with the leading edge (top) of the paper in first.

  To print the second side, put the paper face down, with the leading edge (top) of the paper in first.

  If letterhead paper is used, this would be put in with the heading face down, and in first.

  To print the second side, put the heading face up and in first.
- For the paper tray:

  Put the side to be printed on first, face down, with the leading edge (top) of the paper at the front of the tray.

  To print the second side, put the paper face up, with the leading edge (top) of the paper at the front of the tray.

  If letterhead paper is used, this would be put in the paper tray with the heading face up, and at the front of the tray.

  To print the second page, put the heading face down and at the front of the tray.

2 Driver and software

Printer driver

A printer driver is software that translates data from the format used by a computer to the format that a particular printer needs. Typically, this format is a printer command language or page description language.

The printer drivers for the following version of Windows® and Macintosh® are on the CD-ROM that we have supplied. You can also download the latest printer driver for all of the following operating systems from the Brother Solutions Center at http://solutions.brother.com

The installation instructions for installing the printer driver for Windows® and Macintosh® are in the Quick Setup Guide.

If you want to uninstall the printer driver, see *Uninstalling the printer driver* on page 2-14.

For Windows® 95/98/Me, Windows NT® 4.0 and Windows® 2000/XP

- Windows printer driver (Hewlett-Packard LaserJet laser printer compatible driver) (For HL-2070N)
- Brother GDI printer driver for Windows® (For HL-2030 and HL-2040)
- Generic PCL Driver (For users of Citrix® MetaFrame®, Windows® Terminal Server environments and other Windows NT 4.0® and Windows® 2000/XP network shared environments, we recommend the use of our Generic PCL Driver. This driver only supports basic printing functions.) (For HL-2070N: For Windows NT®4.0 and Windows® 2000/XP.)

For Macintosh®

- Brother Laser driver for Macintosh®

For Linux

- GDI printer driver

Note

For more infomation about Generic PCL Driver and Linux printer driver, please visit our web site at http://solutions.brother.com.

	Windows printer driver	GDI driver	Generic PCL Driver	Brother Laser driver
Windows® 95	ⓘ (For HL-2070N)	ⓘ (For HL-2040)		
Windows NT® 4.0			ⓘ (For HL-2070N)	
Windows® 98/Me		ⓘ (For HL-2030 and HL-2040)		
Windows® 2000 Windows® XP			ⓘ (For HL-2070N)	
Mac OS® 9.1 to 9.2 Mac OS® X 10.2.4 or greater				ⓘ
Linux (Mandrake 9.1, Red Hat 9.0, SuSE Linux 8.2, Debian 3.0r1)		ⓘ		

You can change the following printer settings when you print from your computer.

- Paper Size
- Multiple Page
- Orientation
- Copies
- Media Type
- Paper Source
- Resolution
- Toner Save Mode
- Manual Duplex printing[*1]
- Watermark[*1]
- Job Spooling[*1]
- Quick Print Setup[*1]
- Sleep Time[*1]
- Status Monitor[*1]
- Macro[*1*3]
- Administrator[*1*2]
- Insert Command/File[*1*2*3]
- Page Protection[*1]
- Print Date & Time[*1]
- Density adjustment[*1]
- True Type Mode[*1*3]
- Error Message Printout[*1]

[*1] These settings are not available with Brother Laser driver for Macintosh®.

[*2] These settings are not available with Windows NT® 4.0 and Windows® 2000/XP.

[*3] These settings are not available for HL-2030 and HL-2040.

For Windows®

Features in the printer driver

You can download the latest printer driver or get other information by accessing the Brother Solutions Center at http://solutions.brother.com

You can also change settings by clicking the illustration on the left side of the **Basic** tab in the **Properties** dialog box.

For more information, please see the **Help** text in the printer driver.

Note

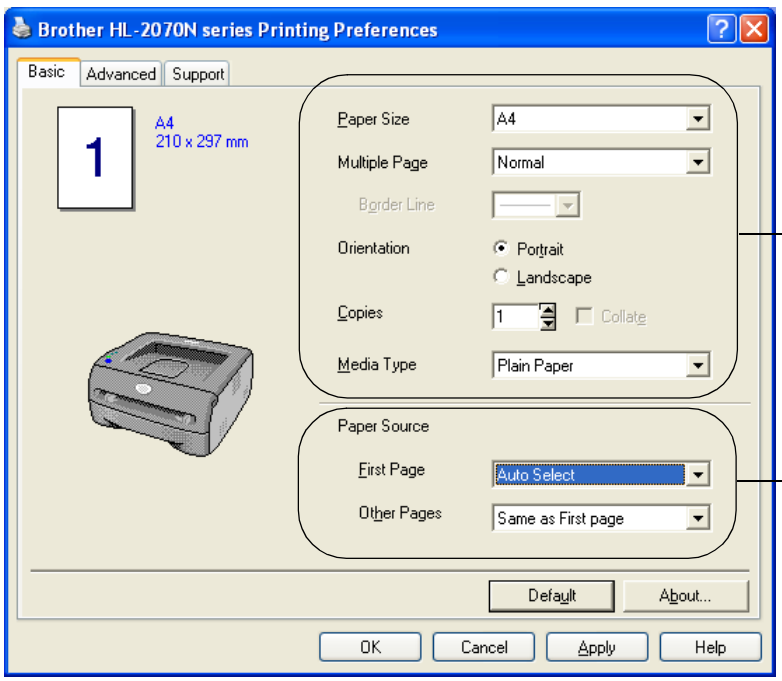
The screens in this section are from Windows® XP. The screens on your PC will vary depending on your Operating System.

Basic tab

Note

If you are using Windows® 2000 or XP, you can access the **Basic** tab by clicking **Printing Preferences...** in the **General** tab of the **Printer Properties** screen.

If you are using Windows NT® 4.0, you can access the **Basic** tab by clicking **Document Defaults...** in the file menu of the **Printers** folder.



Select the **Paper Size**, **Multiple Page**, **Orientation** and other settings.

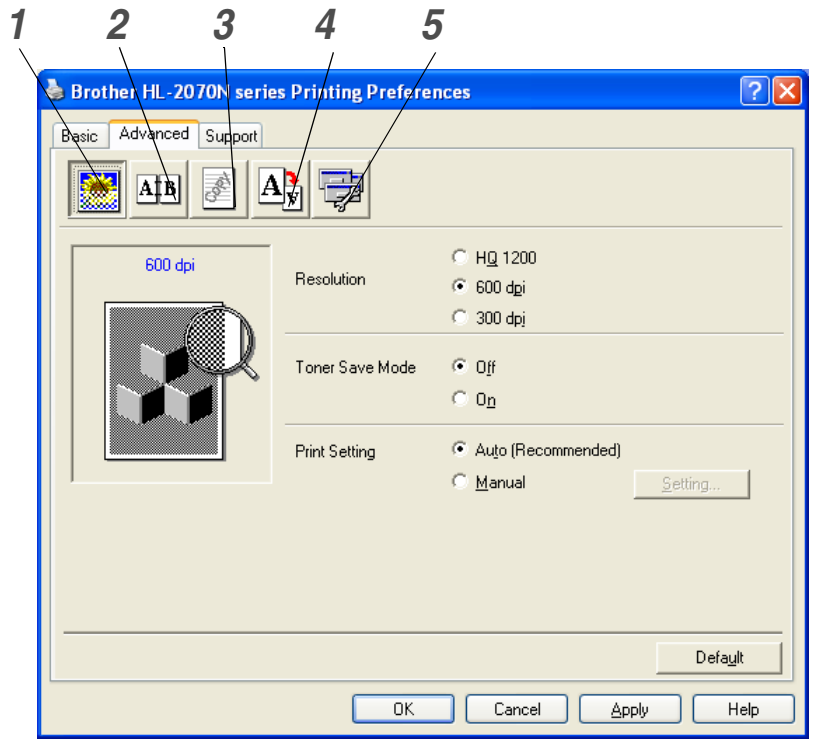
Select the **Paper Source** and other settings.

Advanced tab

Note

If you are using Windows® 2000 or XP, you can access the **Advanced** tab by clicking **Printing Preferences...** in the **General** tab of the **Printer Properties** screen.

If you are using Windows NT® 4.0, you can access the **Advanced** tab by clicking **Document Defaults** in the file menu of the **Printers and Faxes** folder.



Change the tab settings by clicking the following icons:

1. Print Quality
2. Duplex Printing
3. Watermark
4. Page Setting
5. Device Options

Print Quality

Select the resolution, toner save mode and print settings or gray printing setting.

Resolution

You can change the resolution as follows:

- HQ 1200
- 600 dpi
- 300 dpi

Toner Save Mode

You can save running costs by turning on the toner save mode, which reduces the print density.

Print Setting

You can manually change the Print setting.

- **Auto**

  Selecting the **Auto** button will allow automatic printing with the most suitable print settings for your print job.

- **Manual**

  You can change the settings manually by selecting the **Manual** button and clicking the **Setting...** button.

  For Windows® 95/98/Me users: brightness, contrast and other settings.

  For Windows NT® 4.0, Windows® 2000/XP users: Printer Halftone, System Halftone, Improve gray printing.

Duplex Printing

- **Manual Duplex**

  If you select **Manual Duplex**, the dialog box for the manual duplex settings will appear. There are six types of manual duplex binding directions available for each orientation.

- **Binding Offset**

  If you check the Binding Offset option, you can also specify the offset for binding in inches or millimeters.

Watermark

You can put a watermarked logo or text into your documents.

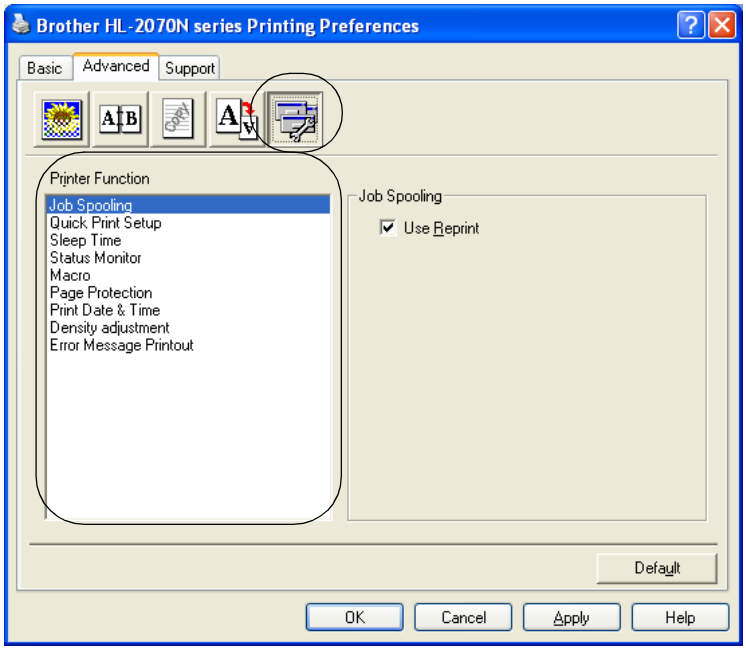
When you use a bitmap file as a watermark, you can change the size of the watermark and put it anywhere you like on the page.

When you use text as a watermark, you can change the font, darkness and angle settings.

Page Setting

You can change the print image scaling and select **Mirror / Reverse print** options.

Device Options



You can set the following **Printer Function** modes in this tab:

(You can jump to the page for each **Printer Function** by clicking the function name in the list below.)

- Job Spooling
- Quick Print Setup
- Sleep Time
- Status Monitor
- Macro (For HL-2070N)
- Administrator (For Windows® 95/98/Me users only)
- Insert Command/File (For HL-2070N: For Windows® 95/98/Me users only)
- Page Protection
- Print Date & Time
- Density adjustment
- Error Message Printout

Note

The **Printer Function** list may differ depending on the model.

Job Spooling

The printer saves data that you want to reprint.

You can reprint a document without sending the data again from your PC. To reprint press and hold down the **Go** button for about 4 seconds until all the LEDs light up in order (**Toner**, **Drum**, **Paper**, **Ready**).

Note

- **Reprint** function is not available for multiple copies.
- If you want to prevent other people from printing your data using the Reprint function, clear the **Use Reprint** check box in the job spooling settings.

Quick Print Setup

You can turn the Quick Print Setup function ON or OFF. A small selection window appears on your computer. This will then let you make changes to the settings of the following functions:

- Multiple Page
- Manual Duplex Printing
- Toner Save Mode
- Paper Source
- Media Type

Sleep Time

When the printer does not receive data for a certain period of time (timeout), it enters sleep mode. Sleep mode acts as though the printer was turned off. The default time-out is 5 minutes. When **Intelligent Sleep Mode** is selected, it is automatically adjusted to the most suitable time-out setting depending on how often you use your printer. While the printer is in sleep mode, all the LEDs are off, but the printer can still receive data from the computer. Receiving a print file or document automatically wakes up the printer to start printing. Pressing the **Go** button will also wake up the printer.

Sleep mode can be turned off. To turn sleep mode off, go to the **Advanced** tab, select **Device Options** and then select **Sleep Time**. Double click the word **Sleep Time** in the **Sleep Time** screen, this will allow the **Sleep Time Off** function to appear, click **Sleep Time Off** to stop the printer from going into sleep mode. The **Sleep Time Off** function can be hidden by double clicking the word **Sleep Time** in the **Sleep Time** screen again. We recommend that you keep Sleep mode on for power saving.

Status Monitor

This reports the printer status (any errors that may happen with the printer) when printing. The default setting for the Status Monitor is off. If you would like to turn the status monitor on, go to the **Advanced** tab, select **Device options** and then select **Status monitor**.

Macro (For HL-2070N)

You can save a page of a document as a macro to the printer memory. Moreover, you can execute the saved macro - in other words, you can use the saved macro as an overlay on any document. This will save time and increase printing speed for often used information such as forms, company logos, letterhead formats or invoices.

Administrator (For Windows® 95/98/Me users only)

Administrators have the authority to limit the Number of copies, Scaling setting and Watermark setting functions.

- Password
  Enter the password into this box.
- Set Password
  Click here to change the password.
- COPY LOCK
  Lock the copy pages selection to prevent multiple copy printing.
- WATERMARK LOCK
  Lock the current settings of the Watermark option to prevent changes being made.
- SCALING LOCK
  Lock the scaling setting as shown below.
  1 in 1
  100%

Insert Command/File (For HL-2070N: For Windows® 95/98/Me users only)

This option allows data to be inserted into a print job.

Using this function allows you to do the following.

- Insert a print file or tiff format file into a print job.
- Insert a text string into a print job.
- Insert a macro, which is saved in printer memory, into a print job.

Page Protection

Page Protection refers to a setting that reserves additional memory for the creation of full page images.

Selections are AUTO, OFF and Printer Default.

The page protection feature allows the printer to create the full page image to be printed in memory before physically moving the paper through the printer. When the image is very complicated and the printer has to wait to process the image before printing, use this function.

Print Date & Time

Date: Specifies the format of the date.

Time: Specifies the format of the time.

Density adjustment

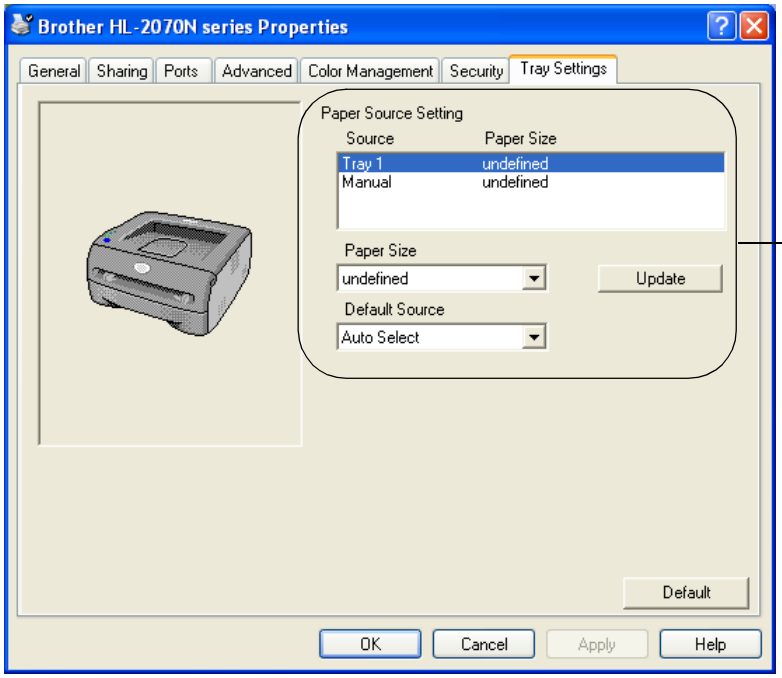
Increase or decrease the print density.

Error Message Printout

You can choose whether the printer reports problem by printing error page or not. About the errors, see *Error message printout* on page 6-3.

Selections are Printer Default (ON), ON and OFF.

Tray Settings tab



Paper Source Setting
This feature recognizes the paper size in each paper tray.

Support tab

Note

If you are using Windows® 2000 or XP, you can access the **Support** tab by clicking **Printing Preferences...** in the **General** tab of the **Printer Properties** screen.

If you are using Windows NT® 4.0, you can access the **Support** tab by clicking **Document Defaults...** in the file menu of the **Printers** folder.

- You can download the latest driver or get other product information by accessing the Brother Solutions Center at http://solutions.brother.com
- You can see the printer driver version.
- You can check the current driver settings.
- You can print the printer settings page and the internal fonts list. (The internal fonts list is available for HL-2070N only.)

For Macintosh®

This printer supports Mac OS® 9.1 to 9.2 and Mac OS® X 10.2.4 or greater.

You can download the latest printer driver by accessing the Brother Solutions Center at http://solutions.brother.com

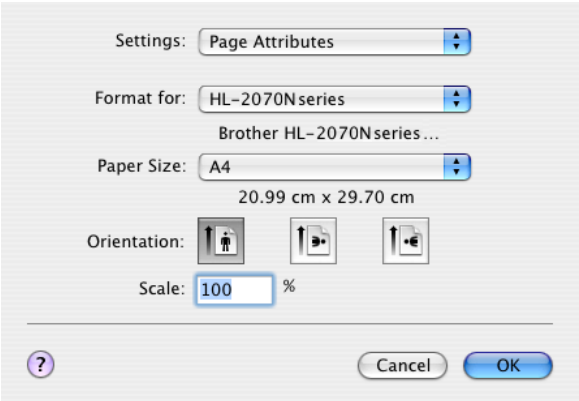
Note

The screens in this section are from Mac OS® X 10.3.

The screens on your Macintosh® will vary depending on your Operating System.

Page setup

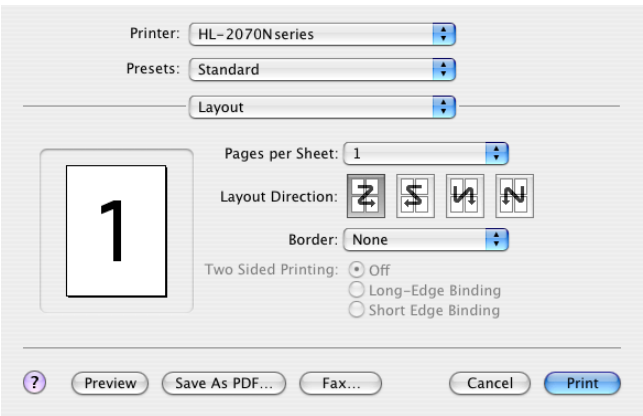
You can set the **Paper size**, **Orientation** and **Scale**.



Print

Layout

Set the **Pages per Sheet**, **Layout direction** and **Border**.



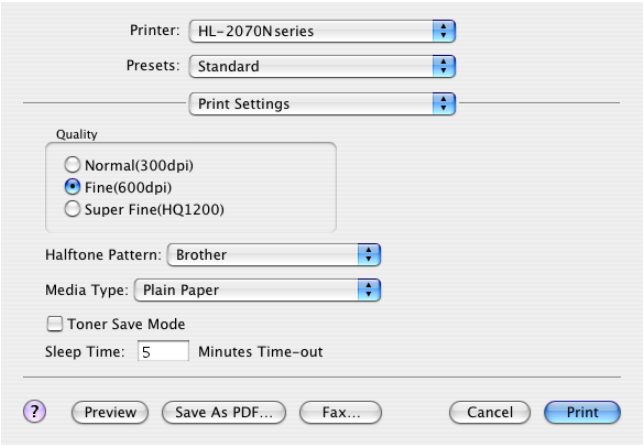
Pages per sheet: Select how many pages will appear on each side of the paper.

Layout direction: When you specify the Pages per sheet, you can also specify the direction of the layout.

Border: If you want to add a border, use this function.

Print settings

Set the **Resolution**, **Media Type**, **Toner Save** and other settings.



You can change settings by selecting the setting in the **Printer Settings** list:

- Quality
- Media Type
- Toner Save Mode

Quality

You can change the resolution as follows:

- 300 dpi
- 600 dpi
- HQ 1200

Media Type

You can change the media type as follows:

- Plain Paper
- Recycled Paper
- Thick Paper
- Transparencies
- Thicker Paper
- Thin Paper
- Bond Paper
- Envelopes
- Env.Thin
- Env.Thick

Toner Save Mode

You can save running costs by turning on the **Toner Save** setting, which reduces the print density.

Uninstalling the printer driver

You can uninstall the printer driver that you installed with the following steps.

Note

- This instruction is not available if you installed the printer driver from Windows Add Printer function.
- After uninstalling, we recommend that you restart your PC to remove files that were in use during uninstall.

Printer driver for Windows®

For Windows® 95/98/Me, Windows NT® 4.0 and Windows® 2000

1. Click **Start** and select your appropriate printer from **Programs**.
2. Select **UnInstall**.
3. Follow the instructions on the screen.

For Windows® XP

1. Click **Start** and select your appropriate printer from **ALL Programs**.
2. Select **UnInstall**.
3. Follow the instructions on the screen.

Brother Laser driver for Macintosh®

For Mac OS® 9.1 to 9.2

1. Open the **Extensions** folder located in the **System Folder** on the **Macintosh HD**.
2. Drag all these following files in the **Extensions** folder to the **trash**.
   - BR_PrintMonitor(laser)
   - Brother Laser
   - Brother Laser(IP)

Note

There may be several of the USB Print Driver(BRXXX)* and BR_PrintMonitor(BXX)* extensions with different endings.

*The 'x' refers to the model of your machine.

3. Restart the Macintosh®.
4. Once the computer has restarted you can then dump the trash.

For Mac OS® X 10.2.4 or greater

1. Disconnect the USB cable between the Macintosh and your printer.
2. Restart the Mac.
3. Log on as an "Administrator".
4. Run the **Print Center** (from the **Go** menu > **Applications** > **Utilities** > **Print Center** folder), then choose the printer you want to remove and remove it by clicking the **Delete** button.
5. Click on the name of your printer in the printer list. From the **Finder** menu, delete the Printer.
6. Drag the **HL-MFLPro** folder (from the **Mac OS X 10.X** > **Library** > **Printers** > **Brother**) into the Trash bin and then empty the trash bin.
7. Restart the Macintosh®.

Software

Note

This section is for Windows®.

Software for Networks

Note

This section is for HL-2070N.

BRAdmin Professional

The BRAdmin Professional software is a utility for managing your Brother network enabled printers that are running under Windows® 95/98/Me, Windows NT® 4.0 and Windows® 2000/XP.

It allows you to easily configure and check the status of your printer on the network.

Driver Deployment Wizard

This installer includes the Windows® printer driver and Brother network port driver (LPR and NetBIOS).

If the administrator installs the printer driver and port driver using this software, the administrator can save the file to the file server or send the file by E-mail to users. Then, each user just clicks that file to have the printer driver, port driver, IP address, and so on, automatically copied to their PC.

Network Print Software

This installer includes the port monitors (Peer-to-Peer Printing software).

They allow you to print through the Network (LAN) under Windows®.

Web BRAdmin

The Web BRAdmin software is designed to manage all LAN/WAN Brother network connected devices. By installing the Web BRAdmin server software on a computer running IIS*, Administrators with a Web browser can connect to the Web BRAdmin server, which then communicates with the device itself. Unlike the BRAdmin Professional software - which is designed for Windows® systems only - the Web BRAdmin server software can be accessed from any client computer with a web browser that supports Java 2.

You can download the Web BRAdmin software from our web site at http://solutions.brother.com/

IIS* = Internet Information Server 4.0 or 5.0

Web BRAdmin and Internet Information Server 4.0 is supported on the following operating systems:

- Windows NT® 4.0 Server

Web BRAdmin and Internet Information Server 5.0 is supported on the following operating systems:

- Windows® 2000 Server
- Windows® 2000 Advanced Server
- Windows® XP Professional
- Windows® 2000 Professional

Automatic Emulation Selection

Note

This section is for HL-2070N.

This printer has an Automatic Emulation Selection feature. When the printer receives data from the computer, it automatically chooses the emulation mode. This feature has been set at the factory to ON.

You can change the setting using Remote Printer Console or Web browser.

Note

For more information about Remote Printer Console, see the following section.

The printer can choose from the following combinations:

Setting 1 (default)	Setting 2
HP LaserJet	HP LaserJet
EPSON FX-850	IBM ProPrinter XL

Remote Printer Console

Remote Printer Console is software to change many of the printer settings independently of your software application. For example, you can change the settings for printer margin, sleep mode, character set and so on. These settings are then remembered and used by the printer.

How to use and install the Remote Printer Console software

To use the Remote Printer Console software, follow the steps below.

For Windows®

1. Insert the CD-ROM into your CD-ROM drive and close the opening screen when it appears.
2. Open Windows® Explore and select the CD-ROM drive.
3. Double-click the **RPC** folder.
4. Refer to the **RPC_User's_Guide.pdf** for how to install and use the Remote Printer Console.

For Macintosh®

1. Insert the CD-ROM into your CD-ROM drive. Double-click the **HL2000** icon on the desktop.
2. Double-click the **RPC** folder.
3. Refer to the **RPC_User's_Guide.pdf** for how to install and use the Remote Printer Console.

3 Control panel

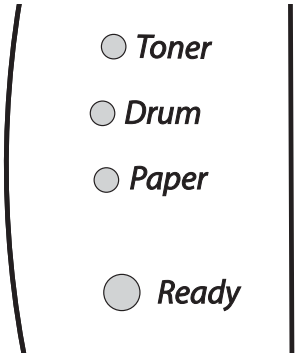
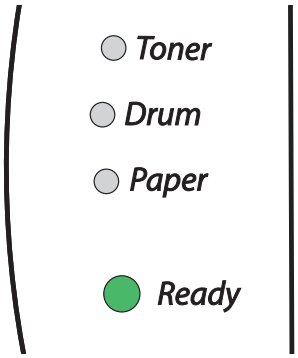
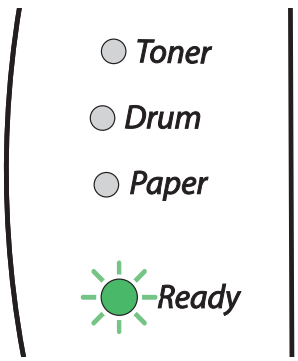
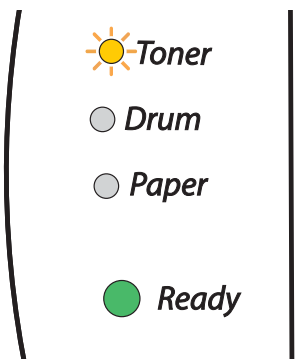
This section refers to the four Light Emitting Diodes (LEDs) (**Toner**, **Drum**, **Paper**, **Ready**) and a control panel button (**Go**) on the control panel.

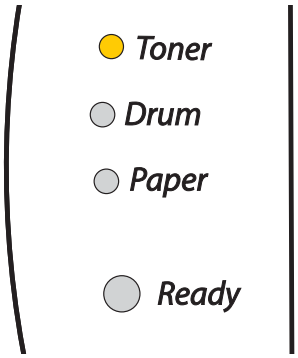
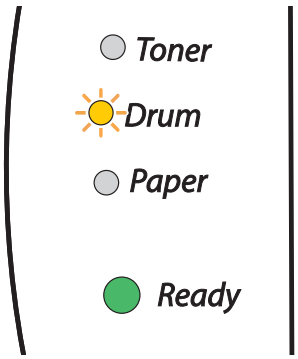
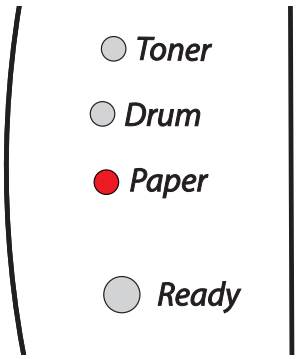
The LED indications shown in the table below are used in the illustrations in this chapter.

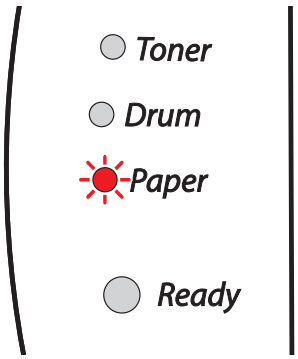
	LED is off
or or	LED is on
or or	LED is blinking

Note

When the power switch is off or the printer is in Sleep mode, all the LEDs are off.

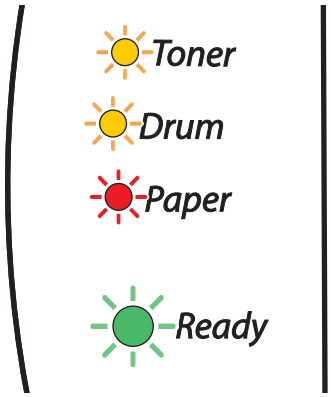
LED	Printer status
	**Sleep mode** The power switch is off or the printer is in Sleep mode. Pressing the **Go** button wakes up the printer from Sleep mode to Ready mode.
	**Ready to print** The printer is ready to print.
	**Warming up** The printer is warming up. **Receiving data** The printer is either receiving data from the computer, processing data in memory or printing the data. **Data remaining in memory** Print data is left in the printer memory. If the **Ready** LED blinks for a long time and nothing has printed, press the **Go** button to print the data that is still in memory.
	**Toner low** Indicates that the toner cartridge is nearly empty. Purchase a new toner cartridge and have it ready for when **Toner Life End** is indicated. The **Toner** LED alternates turning on for 2 seconds and off for 3 seconds.

LED	Printer status
	**Toner life end** Replace the toner cartridge with a new one. See *Replacing the toner cartridge* on page 5-3. **Cartridge position error** The toner cartridge is not installed correctly. Take out the toner cartridge and put it back into the printer again.
	**Drum life end soon** The drum unit is near the end of its life. We recommend that you get a new drum unit to replace the current one. See *Replacing the drum unit* on page 5-8. The **Drum** LED alternates turning on for 2 seconds and off for 3 seconds.
	**No paper fed tray 1** Put paper in the tray. See *Printing on plain paper, bond paper or transparencies from the paper tray* on page 1-7. Then press the **Go** button.

LED	Printer status
	**Front cover is open** Close the front cover of the printer.
	Back cover is open Close the back cover of the printer.
	Paper jam Clear the paper jam. See *Paper jams and how to clear them* on page 6-5. If the printer does not start printing, press the **Go** button.
	No paper fed manual feed slot Put the paper in the manual feed slot. See *Printing on plain paper, bond paper or transparencies from the manual feed slot* on page 1-10 or *Printing on thick paper, labels and envelopes from the manual feed slot* on page 1-13.
	Memory full The printer memory is full and the printer cannot print full pages of a document. See *Solving print problems* on page 6-15.
	Print overrun A print overrun occurred and the printer cannot print full pages of a document. See *Solving print problems* on page 6-15.
	Dust on drum The corona wire needs to be cleaned. See *Cleaning the corona wire* on page 5-14.

Service call indications

If there is an error that cannot be cleared by the user, the printer will show that a service call is needed by lighting up all the LEDs as shown below.



If you see the service call indication above, turn off the power switch, wait a few seconds, and then turn it back on and try to print again.

If you cannot clear the error and see the same service call indication after turning the printer back on, call your dealer or a Brother authorized service representative.

When you press the **Go** button, the LEDs will light up as shown in Table 1. See *Table 1: LED indications while pressing Go button* on page 3-6 to identify the error.

For example, the LED indication below shows a fuser unit failure.

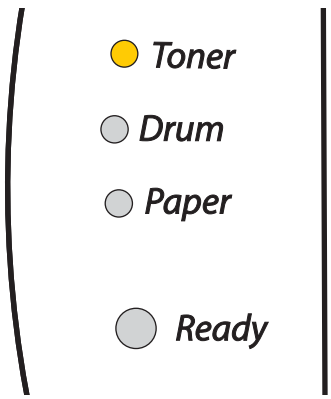


Table 1: LED indications while pressing Go button

LEDs	fuser unit failure*1	Laser unit failure	Main motor failure	Main PCB failure
Toner				
Drum				
Paper				
Ready				

Make a note of the indication and report the error status to your dealer or a Brother authorized service representative by referring to the above table.

Note

Make sure that the front cover is fully closed before you report a service call.

*1 If this error occurs, turn the power switch off, wait a few seconds, and then turn it on again.
Leave the printer for 10 minutes with the power on. If the error occurs again, consult your dealer or Brother authorized service representative.

Control panel button (Go button)

The control panel button has the following functions:

Wake-up

If the printer is in Sleep mode, press the **Go** button to wake the printer up and go to the Ready state.

Error recovery

If there is an error, the printer will recover automatically from some errors. If an error is not automatically cleared, press the **Go** button to clear the error, and then continue to use the printer.

Form feed

If the green **Ready** LED blinks for a long time, press the **Go** button. The printer will print any data that is left in the printer memory.

Cancel printing

While printing press the **Go** button for about 4 seconds until all the LEDs light up. The **Ready** and **Paper** LEDs will flash as the job is being cancelled.

Reprint

To reprint the last document, press the **Go** button for about 4 seconds until all the LEDs light up.

Print a test page

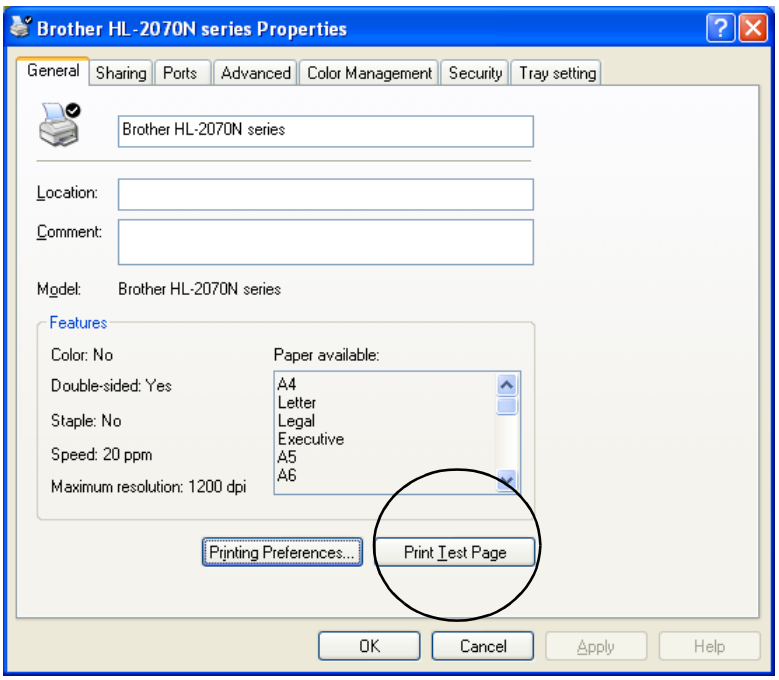
You can use the **Go** button or the printer driver to print a test page.

Using control panel button

1. Turn off the printer.
2. Make sure that the front cover is closed and the power cord is plugged in.
3. Hold down the **Go** button as you turn on the power switch. Keep the **Go** button pressed down until the **Toner**, **Drum** and **Paper** LEDs light up. Release the **Go** button. Make sure that the **Toner**, **Drum** and **Paper** LEDs are off.
4. Press the **Go** button again. The printer will print a test page.

Using the printer driver

If you are using Brother's Windows® printer driver, click the **Print Test Page** button. It is in the **General** tab of the Windows® printer driver.



Print a Printer Settings page

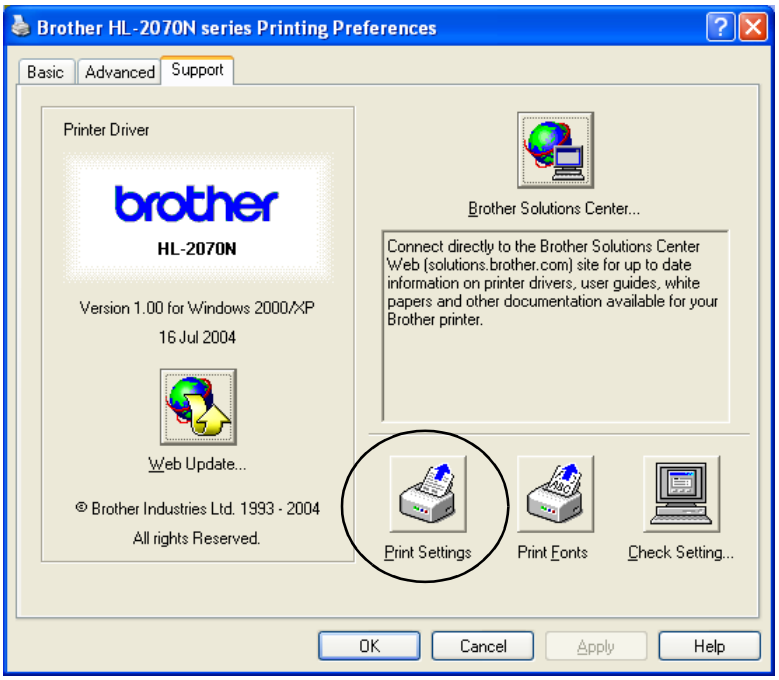
You can print the current settings using the control panel button or printer driver.

Using the control panel button

1. Make sure that the front cover is closed and the power cord is plugged in.
2. Turn on the printer and wait until the printer is in the Ready state.
3. Press the **Go** button three times within 2 seconds. The printer will print the current printer settings page.

Using the printer driver

If you are using Brother's Windows® printer driver, you can print the current printer settings page by clicking the **Print Settings** button in the **Support** tab.



Print Fonts (For HL-2070N)

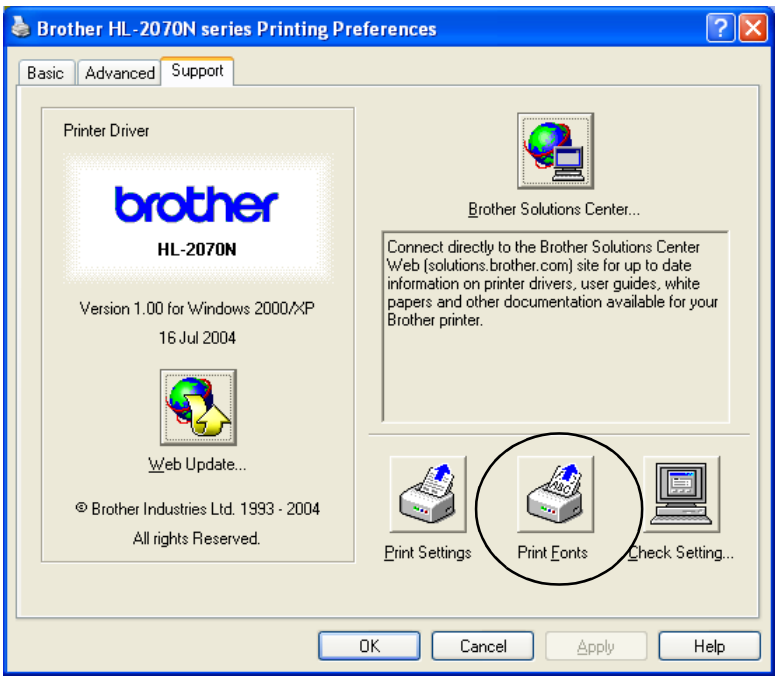
You can print a list of the internal fonts using the control panel button or printer driver.

Using the control panel button

1. Turn off the printer.
2. Make sure that the front cover is closed and the power cord is plugged in.
3. Hold down the **Go** button as you turn on the power switch. Keep the **Go** button pressed down until the **Toner**, **Drum** and **Paper** LEDs light up. Release the **Go** button. Make sure that the **Toner**, **Drum** and **Paper** LEDs are off.
4. Press the **Go** button twice. The printer will print a list of the internal fonts.

Using the printer driver

If you are using Brother's Windows® printer driver, you can print a list of the internal fonts by clicking the **Print Fonts** button in the **Support** tab.



Network factory default setting (For HL-2070N)

If you wish to reset the print server back to its default factory settings (resetting all information such as the password and IP address information), please follow these steps:

1. Turn off the printer.
2. Make sure that the front cover is closed and the power cord is plugged in.
3. Hold down the **Go** button as you turn on the power switch. Keep the **Go** button pressed down until the **Toner**, **Drum** and **Paper** LEDs light up. Release the **Go** button. Make sure that the **Toner**, **Drum** and **Paper** LEDs are off.
4. Press the **Go** button six times. Make sure that all the LEDs light up to indicate the print server has been reset to its default factory settings.

Network factory default setting with APIPA protocol disabled (For HL-2070N)

If you wish to reset the print server back to its factory default settings with APIPA protocol disabled, please follow these steps:

1. Turn off the printer.
2. Make sure that the front cover is closed and the power cord is plugged in.
3. Hold down the **Go** button as you turn on the power switch. Keep the **Go** button pressed down until the **Toner**, **Drum** and **Paper** LEDs light up. Release the **Go** button. Make sure that the **Toner**, **Drum** and **Paper** LEDs are off.
4. Press the **Go** button seven times. Make sure that all the LEDs light up to indicate the print server has been reset to its default factory settings.

Note

- For more information of APIPA, see the Network User's Guide or visit http://solutions.brother.com
- You can also disable the APIPA protocol using Web browser, BRAdmin Professional or Web BRAdmin.

4 Options

This printer has the following optional print servers. Click the symbol ⓘ in the table to see the information for each item.

Model	NC-2200w	NC-2100p
HL-2030	ⓘ	N/A
HL-2040	ⓘ	ⓘ
HL-2070N	ⓘ	N/A

Wireless print server (NC-2200w)

An optional network print server (NC-2200w) allows you to print in a wireless environment through the USB interface. The NC-2200w is compatible with Windows® 98/Me, Windows NT® 4.0 and Windows® 2000/XP.

The Brother NC-2200w wireless print server supports the IEEE 802.11b wireless networking standard and can work in Infrastructure or Ad-hoc mode using common wireless security methods.

For more infomation, please visit our web site at http://solutions.brother.com.

Network interface	IEEE 802.11b wireless
Communication Mode	Infrastructure / Ad-hoc 802.11
Security	SSID, WEP (64/128bit)
Printer Interface	USB 1.0
Support Protocol	TCP/IP
Management Features	Embedded web server support
	SNMP / MIB support
	TELNET remote console
	BRAdmin Professional compatible
	Flash memory for easy updating of firmware

Note

The NC-2200w is not available in some regions.

Print server (NC-2100p) (For HL-2040)

An optional network print server (NC-2100p) allows you to connect to your network through the parallel interface.

Network interface	10/100BASE-TX Ethernet
Printer Interface	Parallel
Support Protocol	TCP/IP, NetBEUI
Management Features	Embedded web server support
	SNMP / MIB support
	TELNET remote console
	BRAdmin Professional compatible
	Flash memory for easy updating of firmware

Note

HL-2070N already has a built-in 10/100BASE-TX Ethernet Print Server.

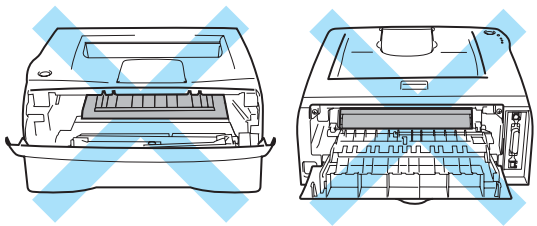
5 Routine maintenance

You will need to replace certain parts and clean the printer regularly.

WARNING

When you replace certain parts or clean the printer regularly, pay attention to the following:

- If your clothes are smeared with toner, wipe off the toner with a dry cloth and immediately wash the clothes in cold water to avoid stains.
- Be careful not to inhale the toner.
- After you have just used the printer, some parts inside the printer are extremely hot. When you open the front cover or back cover of the printer, never touch the shaded parts shown in the illustrations.



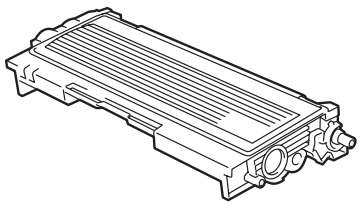
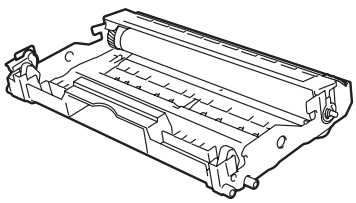
Replacing the consumable items

You will need to replace the consumable items regularly.

Note

These instructions are also included in *Improving the print quality* on page 6-10.

Consumables

Toner Cartridge	Drum Unit
	
See *Toner cartridge* on page 5-2.	See *Drum unit* on page 5-7.

Toner cartridge

The life of the original toner cartridge that came with the printer may be either a starter[*1] or standard[*2] toner cartridge, and depends on the model and country you bought the printer in.

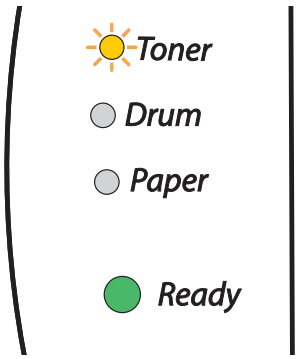
[*1] The starter toner cartridge will print up to 1,500 A4 or Letter-size single-sided pages at 5% coverage.

[*2] Standard and replacement toner cartridges print up to 2,500 A4 or Letter-size single-sided pages at 5% coverage.

Note

- The amount of toner used varies according to what is printed on the page and the print density setting.
- If you change the print density setting for lighter or darker printing, the amount of toner that is used will change.
- Wait to unpack the toner cartridge until immediately before you install it in the printer.

Toner Low message



The **Toner** LED alternates turning on for 2 seconds and off for 3 seconds.

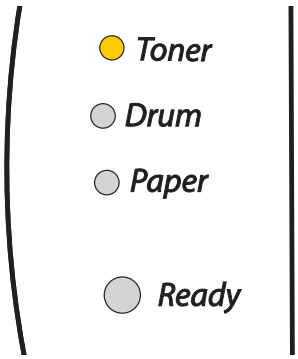
If the LED shows this message, the toner cartridge has nearly run out of toner. Buy a new toner cartridge and have it ready before you get a Toner Life End message. To put in the toner cartridge, see *Replacing the toner cartridge* on page 5-3.

Note

The **Toner** LED will blink continuously if the toner cartridge is nearly empty.

Toner Life End message

If the LED shows the message below, the printer has run out of toner or the toner is not evenly distributed inside the cartridge.

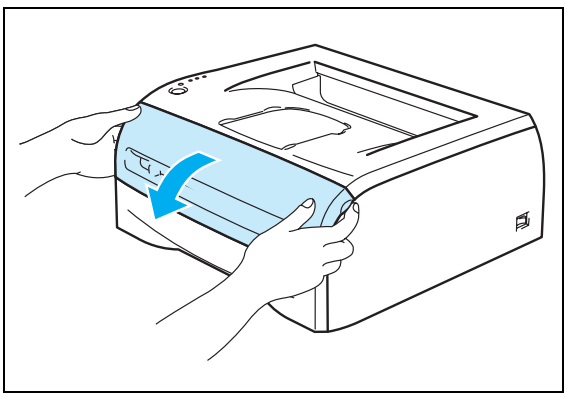


Replacing the toner cartridge

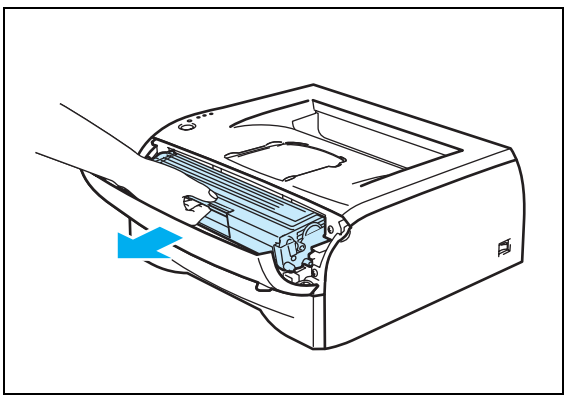
Note

- To ensure high quality printing, make sure you use quality Brother toner cartridges. When you want to buy toner cartridges, call the dealer you bought the printer from or Brother Customer Service.
- We recommend that you clean the printer when you replace the toner cartridge. See *Cleaning* on page 5-11.

1. Open the front cover of the printer.

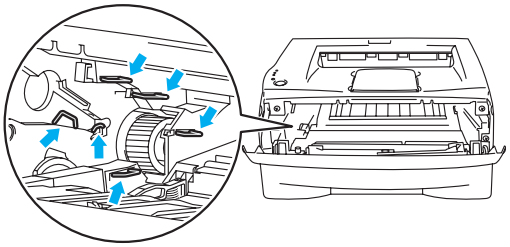


2. Pull out the drum unit and toner cartridge assembly.

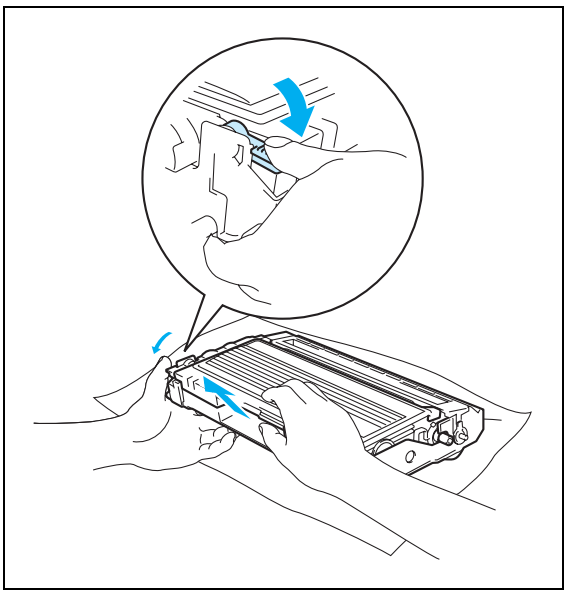


CAUTION

- We recommend that you place the drum unit and toner cartridge assembly on a piece of disposable paper or cloth in case you accidentally spill or scatter toner.
- To prevent damage to the printer from static electricity, do not touch the electrodes shown in the illustrations.



3 Push down the blue lock lever and take the toner cartridge out of the drum unit.



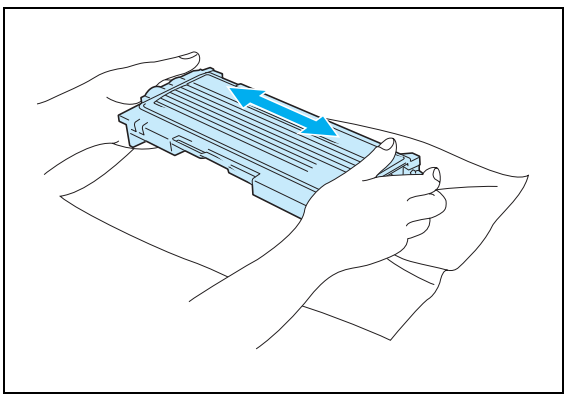
CAUTION

Handle the toner cartridge carefully. If toner scatters on your hands or clothes, immediately wipe or wash it off with cold water.

Note

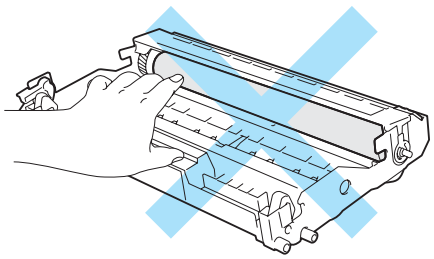
- Be sure to seal up the toner cartridge tightly in a bag so that toner powder does not spill out of the cartridge.
- Discard the used toner cartridge according to local regulations, keeping it separate from domestic waste. If you have questions, call your local waste disposal office.

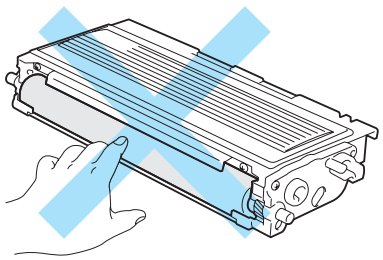
4 Unpack the new toner cartridge. Hold the cartridge level with both hands and gently rock it from side to side five or six times to spread the toner evenly inside the cartridge.



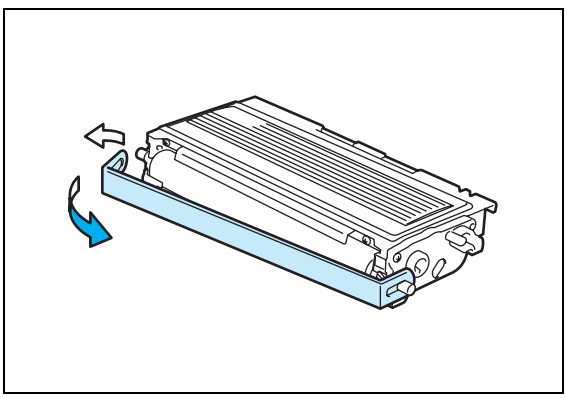
CAUTION

- Wait to unpack the toner cartridge until immediately before you put it in the printer. If toner cartridges are left unpacked for a long time the toner life will be shortened.
- If an unpacked drum unit is put in direct sunlight or room light, the unit may be damaged.
- Brother strongly recommends that you do not refill the toner cartridge provided with your printer. We also strongly recommend that you continue to use only Genuine Brother Brand replacement toner cartridges. Using or attempting to use potentially incompatible toner and/or toner cartridges in your printer may cause damage to the printer itself and/or it may result in unsatisfactory print quality. Our warranty coverage does not apply to any problem that was caused by the use of unauthorized third party toner and toner cartridges. To protect your investment and guarantee your print quality please continue to replace consumed toner cartridges with only Genuine Brother Branded Supplies.
- Printing with a third-party toner or third-party toner cartridge may reduce not only the print quality but also the quality and life of the printer itself. It may also cause serious damage to the performance and life of a drum unit. Warranty coverage does not apply to problems caused by the use of third-party toner or third-party toner cartridges.
- Put the toner cartridge in the drum unit immediately after you have removed the protective cover. Do not touch the shaded parts shown in the illustrations to prevent any degradation to the print quality.

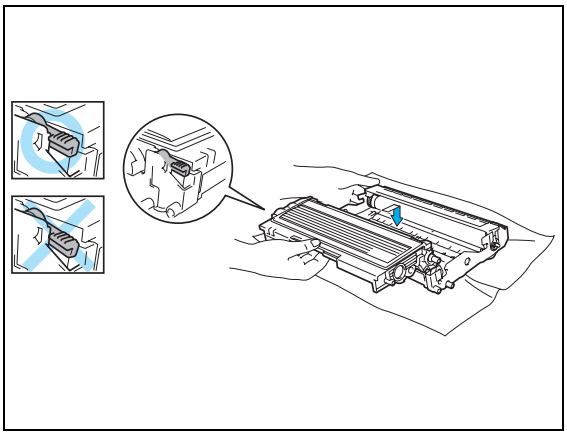




5 Pull off the protective cover.



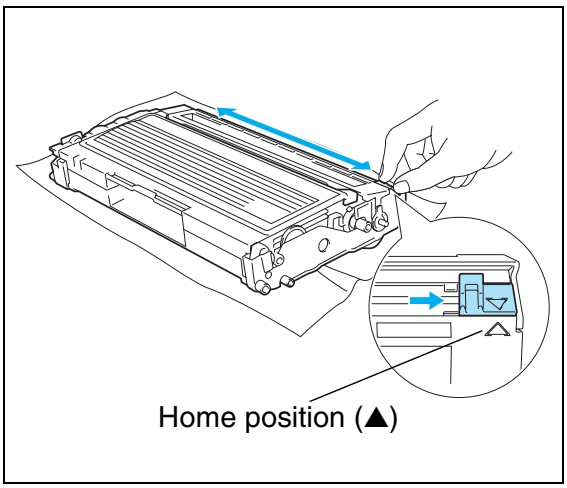
6 Put the new toner cartridge firmly into the drum unit until you hear it lock into place. If you put it in properly, the lock lever will lift automatically.



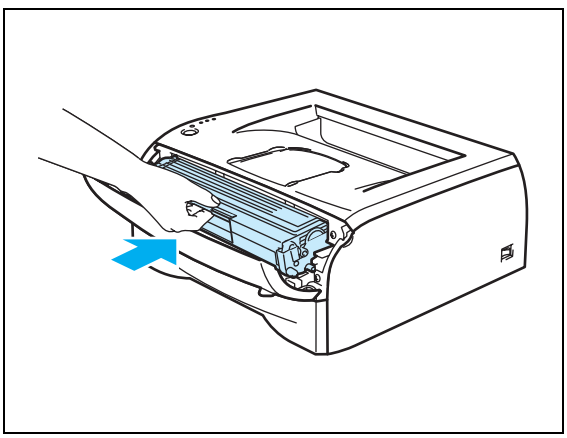
CAUTION

Make sure you insert the toner cartridge properly or it may separate from the drum unit.

7 Clean the primary corona wire inside the drum unit by gently sliding the blue tab from right to left and left to right several times. Return the tab to the home position (▲) before you put the drum unit back in the printer. If you do not, printed pages may have a vertical stripe.



8 Put the drum unit and toner cartridge assembly back in the printer. Close the front cover of the printer.



Drum unit

This printer can print up to 12,000 pages* with one drum unit.

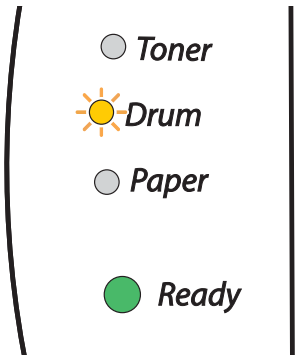
* At 5% print coverage (A4 or Letter size). The actual number of printed pages will vary depending on the average type of print job and paper.

Note

- There are many factors that determine the actual drum life, such as the temperature, humidity, type of paper, type of toner used, number of pages per print job and so on. Under ideal conditions, the average drum life is estimated at up to 12,000 pages. The actual number of pages that your drum will print may be significantly less than this estimate. Because we have no control over the many factors that determine the actual drum life, we cannot guarantee a minimum number of pages that will be printed by your drum.
- For best performance, use only genuine Brother toner. The printer should be used only in a clean, dust-free environment with adequate ventilation.
- Printing with a third-party drum unit may reduce not only the print quality but also the quality and life of the printer itself. Warranty coverage does not apply to problems caused by the use of third-party drum unit.

Change Drum message

If the LED shows the message below, it means the drum unit is near the end of its life. We recommend that you replace the drum unit with a new one before there is a noticeable deterioration in the print quality.



CAUTION

- While removing the drum unit, handle it carefully because it may contain toner.
- Every time you replace the drum unit, you should clean the inside of the printer. See *Cleaning* on page 5-11.

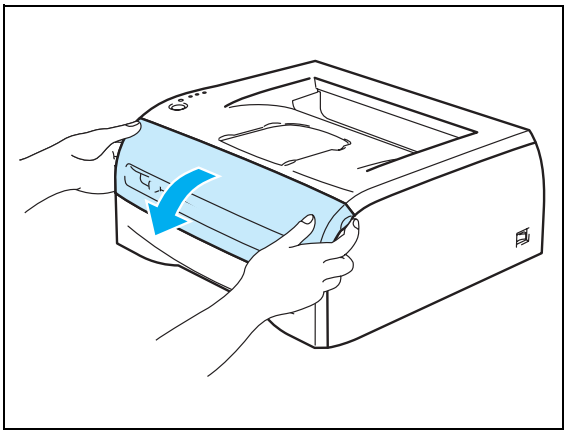
Replacing the drum unit

Note

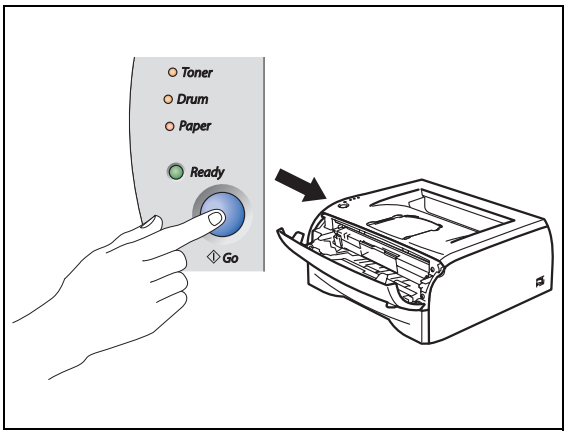
We recommend that you clean the printer when you replace the drum unit. See *Cleaning* on page 5-11.

Follow these steps to replace the drum unit.

1. Make sure that the printer is turned on and the Drum LED is blinking. Open the front cover of the printer.



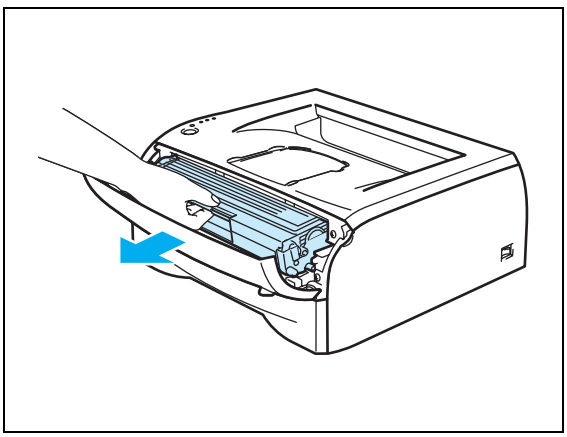
2. Press and hold down the **Go** button for about 4 seconds until all the LEDs light up. Once all four LEDs are lit, release the **Go** button.



IMPROPER SETUP

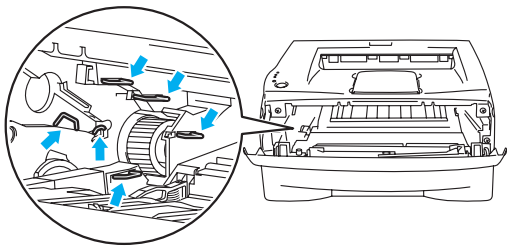
Do not reset the drum counter when you replace only the toner cartridge.

3. Pull out the drum unit and toner cartridge assembly.

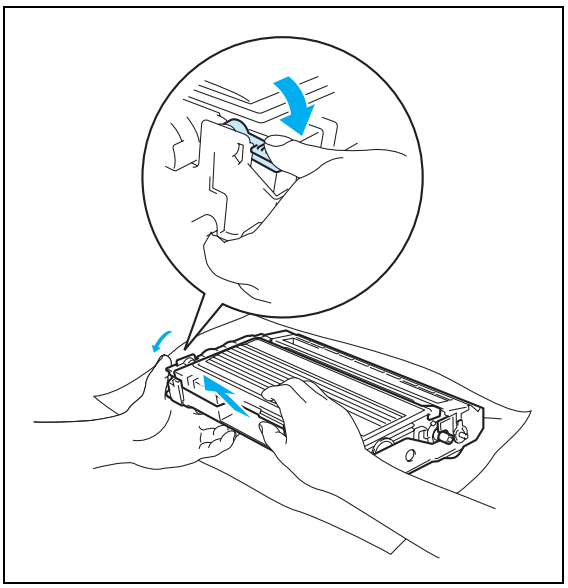


CAUTION

- We recommend that you place the drum unit and toner cartridge assembly on a piece of disposable paper or cloth in case you accidentally spill or scatter toner.
- To prevent damage to the printer from static electricity, do not touch the electrodes shown in the illustrations.



4 Push down the blue lock lever and take the toner cartridge out of the drum unit.



CAUTION

Handle the toner cartridge carefully. If toner scatters on your hands or clothes, immediately wipe or wash it off with cold water.

Note

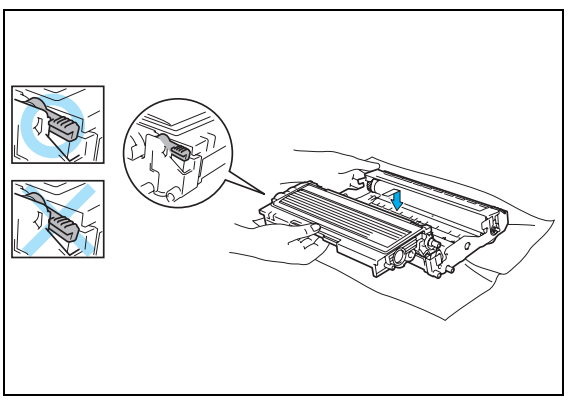
- Be sure to seal up the drum unit tightly in a bag so that toner powder does not spill out of the unit.
- Discard the used drum unit according to local regulations, keeping it separate from domestic waste. If you have questions, call your local waste disposal office.

5 Unpack the new drum unit.

CAUTION

Wait to unpack a drum unit until immediately before you put it in the printer. Exposure to direct sunlight or room light may damage the drum unit.

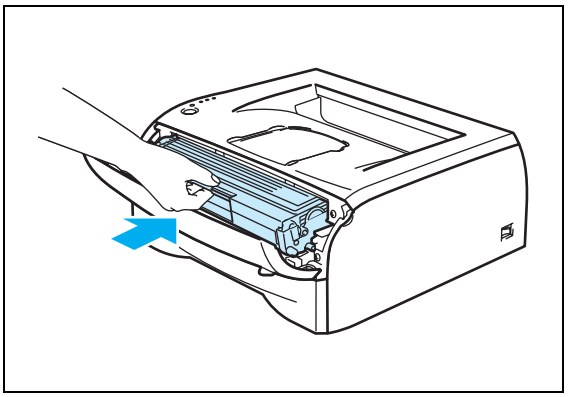
6 Put the toner cartridge firmly into the new drum unit until you hear it lock into place. If you put the cartridge in properly, the blue lock lever will lift automatically.



CAUTION

Make sure you insert the toner cartridge properly, or it may separate from the drum unit.

7 Put the drum unit and toner cartridge assembly in the printer.



8 Close the front cover.

9 Make sure that the **Drum** LED is now off.

Cleaning

Clean the outside and inside of the printer regularly with a dry, lint-free cloth. When you replace the toner cartridge or the drum unit, make sure you clean the inside of the printer. If printed pages are stained with toner, clean the inside of the printer with a dry, lint-free cloth.

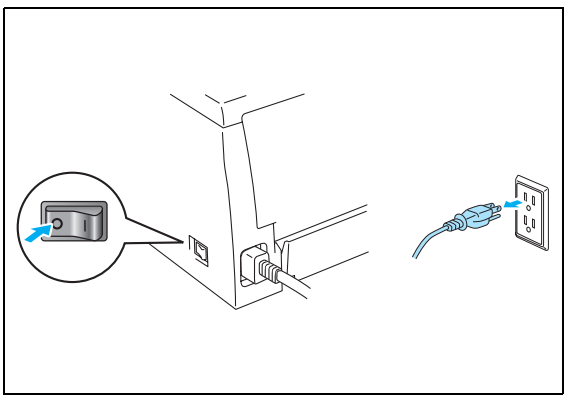
Cleaning the outside of the printer

CAUTION

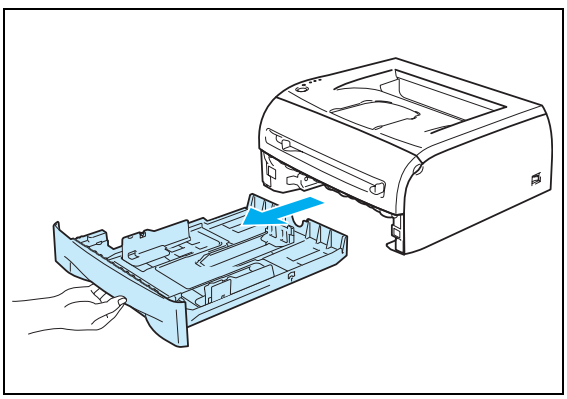
- Use neutral detergents. Cleaning with volatile liquids such as thinner or benzine will damage the surface of the printer.
- Do not use cleaning materials that contain ammonia.

Clean the outside of the printer as follows:

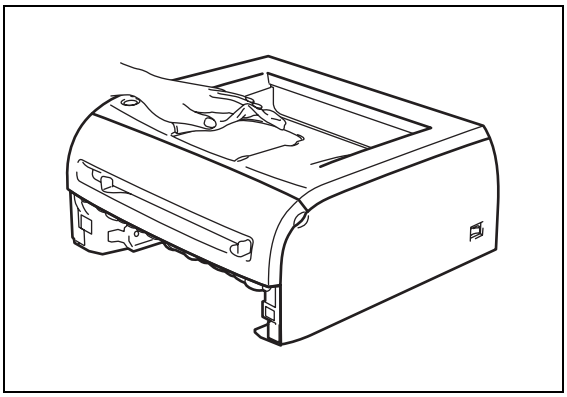
1. Turn off the printer power switch and unplug the printer from the AC power outlet.



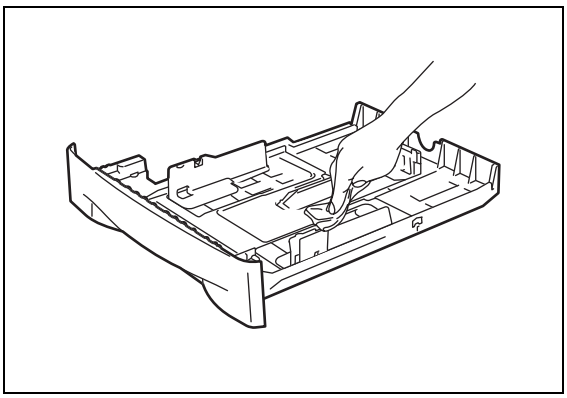
2. Pull the paper tray completely out of the printer.



3. Wipe the outside of the printer with a soft cloth to remove dust.
4. Remove anything that is stuck inside the paper tray.



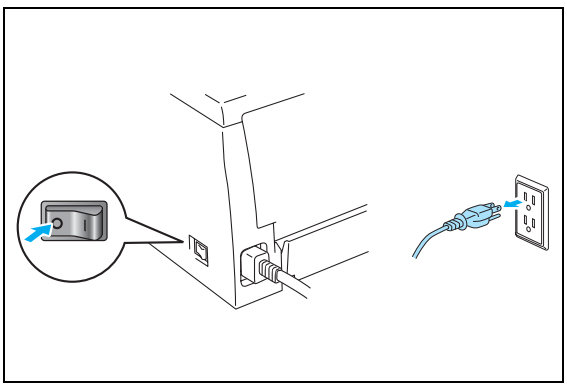
5. Wipe the inside of the paper tray with a soft cloth to remove dust.
6. Put the paper tray firmly back in the printer.
7. Plug the printer back in and turn on the printer power switch.



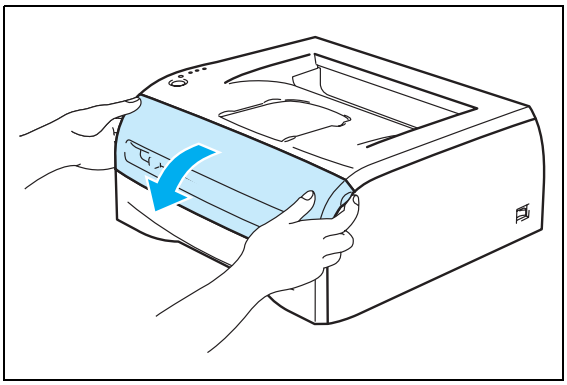
Cleaning the inside of the printer

Clean the inside of the printer as follows:

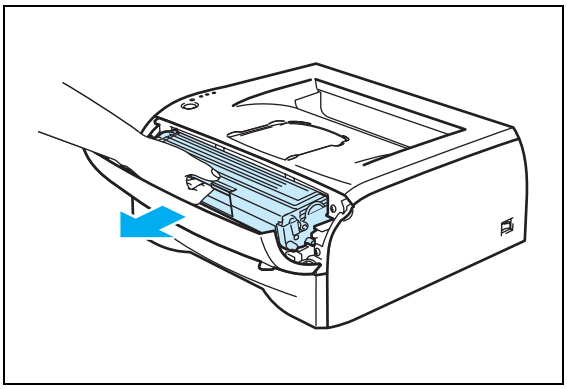
1. Turn off the printer power switch and unplug the printer from the AC power outlet.



2 Open the front cover of the printer.

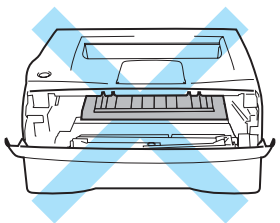


3 Pull out the drum unit and toner cartridge assembly.



HOT SURFACE

After you have just used the printer, some internal parts of the printer are extremely hot! Wait for the printer to cool down before you touch the internal parts of the printer.

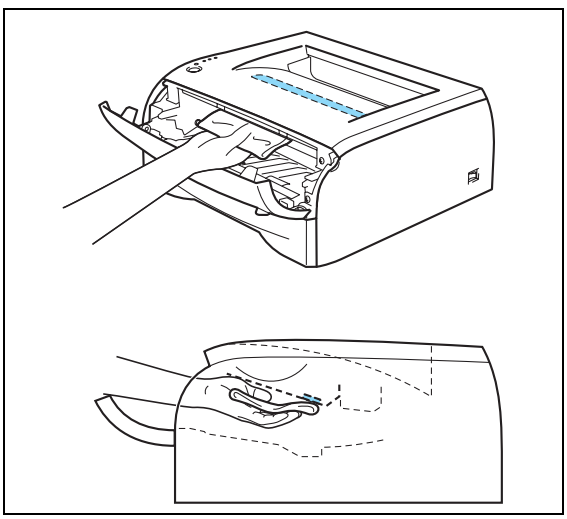


4 Wipe the scanner window with a dry, lint-free cloth.

5 Put the drum unit and toner cartridge assembly back in the printer.

6 Close the front cover.

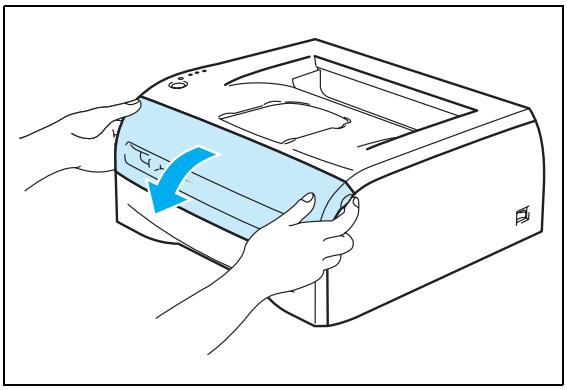
7 Plug the printer back in and turn on the printer power switch.



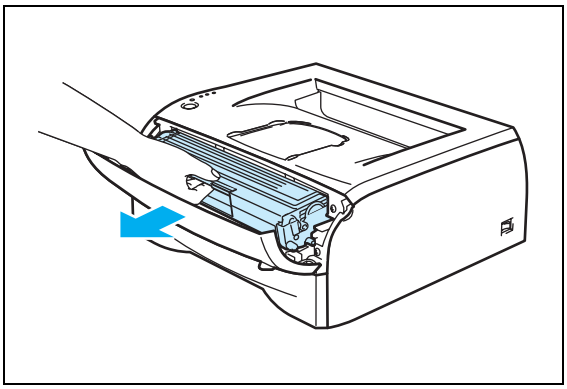
Cleaning the corona wire

If you are experiencing print quality problems, please clean the corona wire as follows:

1. Open the front cover of the printer.

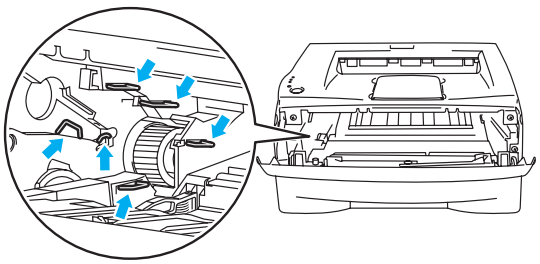


2. Pull out the drum unit and toner cartridge assembly.

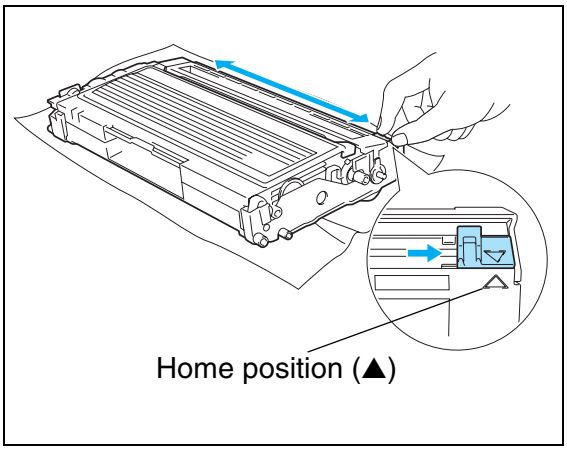


CAUTION

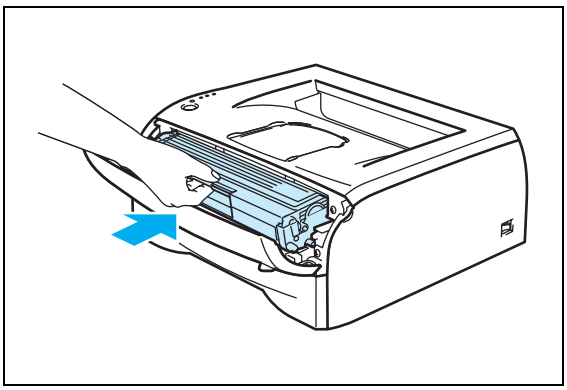
- We recommend that you place the drum unit and toner cartridge assembly on a piece of disposable paper or cloth in case you accidentally spill or scatter toner.
- To prevent damage to the printer from static electricity, do not touch the electrodes shown in the illustrations.



3 Clean the primary corona wire inside the drum unit by gently sliding the blue tab from right to left and left to right several times. Return the tab to the home position (▲) before you put the drum unit back in the printer. If you do not, printed pages may have a vertical stripe.



4 Put the drum unit and toner cartridge assembly back in the printer. Close the front cover of the printer.



6 Troubleshooting

You can correct most problems by yourself. If you need additional help, the Brother Solutions Center offers latest FAQs and troubleshooting tips. Visit us at http://solutions.brother.com.

Identifying your problem

First, check the following:

- The AC power cord is connected properly and the printer is turned on.
- All of the protective parts have been removed.
- The toner cartridge and drum unit are installed properly.
- The front cover is fully closed.
- Paper is inserted properly in the paper tray.
- The interface cable is securely connected to the printer and the computer.
- The correct driver for the printer is installed and selected.
- The PC is set up to connect to the correct printer port.

Printer does not print:

If you did not solve your problem with the above checks, please identify your problem and then go to the section listed:

Printer LED is blinking

See *LED is blinking* on page 3-1.

Status Monitor Error Message appears

See *Error messages in the Status Monitor* on page 6-2.

Printer printed an Error Message

See *Error message printout* on page 6-3.

Paper handling

See *Paper handling* on page 6-4 and *Paper jams and how to clear them* on page 6-5.

Other problems

See *Other problems* on page 6-10.

Pages are printed, however there are problems with:

Print quality

See *Improving the print quality* on page 6-10.

Printout is incorrect

See *Solving print problems* on page 6-15.

Error messages in the Status Monitor

The Status Monitor will report problems with the printer. Take the corrective actions listed in the following table for the error message that the Status Monitor reports.

The default setting for the Status Monitor is off. If you would like to turn the status monitor on, you can change the setting of the Status Monitor in the **Device Options** of the **Advanced** tab. See *Device Options* on page 2-6.

Error message	Action
Cover is open	■ Close the front cover of the printer.
Back Cover is open	■ Close the back cover of the printer.
Memory Full	■ Press the **Go** button to print the data remaining in the printer. Cancel the print job if you want to delete the data remaining in the printer, see *Cancel printing* on page 3-7. ■ Reduce the print resolution or reduce the complexity of your document.
Print Overrun	■ Press the **Go** button to print the data left in the printer. Cancel the print job if you want to delete the data remaining in the printer, see *Cancel printing* on page 3-7. ■ If this does not clear the error, reduce the complexity of your document or reduce the print resolution. ■ Set page protection to **AUTO** by using the supplied Windows® driver or Remote Printer Console program. ■ Change the following settings in the supplied Windows® driver and try again. The best combination of these settings will vary depending on your document: • Graphics mode • TrueType mode • Use Printer TrueType® Fonts
No Paper Fed Tray 1 **No Paper Fed Manual slot**	■ The paper tray may be out of paper or not properly installed. If it is empty, put a new stack of paper in the paper tray and then press the **Go** button. ■ If there is paper in the paper tray, make sure it is straight. If the paper is curled, straighten it before printing. Sometimes it is helpful to remove the paper, turn the stack over and put it back in the paper tray. ■ Reduce the amount of paper in the paper tray, and then try again. ■ Make sure you use paper that meets Brother's recommended paper specifications. See *What kind of paper can I use?* on page 1-4.
Paper Jam Tray 1 **Paper Jam Inside** **Paper Jam Rear**	■ Take out the jammed paper from the indicated area. See *Paper jams and how to clear them* on page 6-5.
Toner Life End	■ See *Replacing the toner cartridge* on page 5-3.
Toner Low	■ Purchase a new toner cartridge and have it ready for when the Toner Life End status is indicated.
Cartridge Position Error	■ Take out the toner cartridge and put it back into the printer again.
Drum Life End Soon	■ The drum is near the end of it's life. Purchase a new drum unit to replace the current one. See *Replacing the drum unit* on page 5-8.
Dust on Drum	■ See *Cleaning the corona wire* on page 5-14.
Service Call	■ Check the LED indication to identify the error. See *Service call indications* on page 3-5.

Error message printout

The printer will report problems by printing an error message as defined in the following table. Take the corrective actions for the error message.

Error message	Action
MEMORY FULL	■ Press the **Go** button to print the data left in the printer. Cancel the print job if you want to delete the data remaining in the printer, see *Cancel printing* on page 3-7. ■ Reduce the print resolution or reduce the complexity of your document.
PRINT OVERRUN	■ Press the **Go** button to print the data left in the printer. Cancel the print job if you want to delete the data remaining in the printer, see *Cancel printing* on page 3-7. ■ If this does not clear the error, reduce the complexity of your document or reduce the print resolution. ■ Set page protection to **AUTO** by using the supplied Windows® driver or Remote Printer Console program. ■ Change the following settings in the supplied Windows® driver and try again. The best combination of these settings will vary depending on your document: • Graphics mode • TrueType mode • Use Printer TrueType® Fonts
RESOLUTION REDUCED TO ENABLE PRINTING (The printer has printed the document at a reduced resolution)	■ Reduce the complexity of your document before you print to prevent automatic reduction in the resolution.

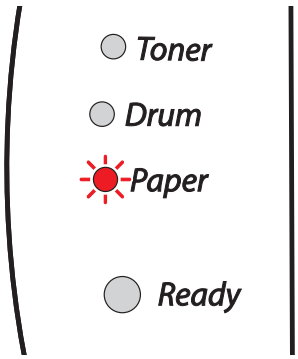
Paper handling

First, make sure that you are using paper that meets Brother recommended paper specifications. See *What kind of paper can I use?* on page 1-4.

Problem	Recommendation
The printer does not feed paper.	■ If there is paper in the paper tray, make sure it is straight. If the paper is curled, you should straighten it before printing. Sometimes it is helpful to remove the paper, turn the stack over and put it back in the paper tray. ■ Reduce the amount of paper in the paper tray, and then try again. ■ Check that manual feed mode is not selected in the printer driver.
The printer does not feed paper from the manual feed slot.	■ Re-insert the paper firmly, one sheet at a time. ■ Make sure that manual feed mode is selected in the printer driver.
The printer will not feed envelopes.	■ The printer can feed envelopes from the manual feed slot. Your application software must be set up correctly to print on the envelope size you are using. This is usually done in the page setup or document setup menu of your software. Please see your software application manual.
A paper jam has occurred.	■ Clear the jammed paper. See *Paper jams and how to clear them* on page 6-5.

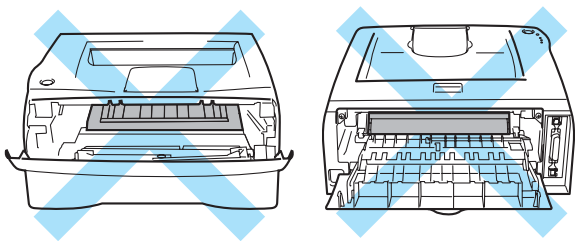
Paper jams and how to clear them

If a paper jam occurs, the printer will tell you by flashing the paper LED as shown below.



HOT SURFACE

After you have just used the printer, some parts inside the printer are extremely hot! When you open the front cover or back cover of the printer, never touch the shaded parts shown in the illustrations.



Clear the jammed paper as follows.

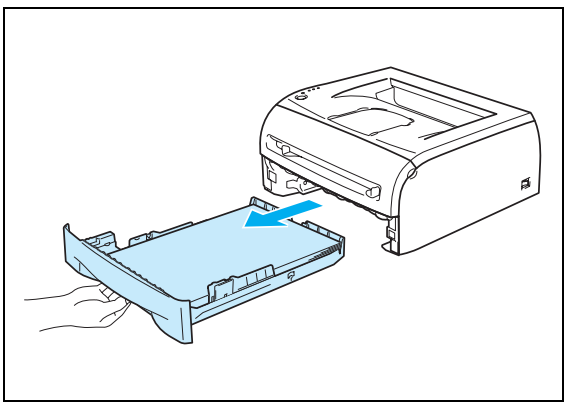
If the jammed paper is removed completely by following the steps below, you can install the paper tray first, and then close the front cover and the printer will resume printing automatically.

If the printer does not start printing automatically, press the **Go** button. If the printer still does not start printing, please check that all the remaining jammed paper has been removed from the printer. Then try printing again.

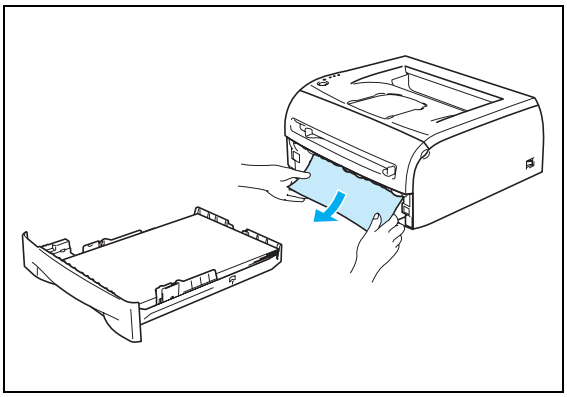
Note

Always remove all paper from the paper tray and straighten the stack when you add new paper. This helps prevent multiple sheets of paper from feeding through the printer at one time and reduces paper jams.

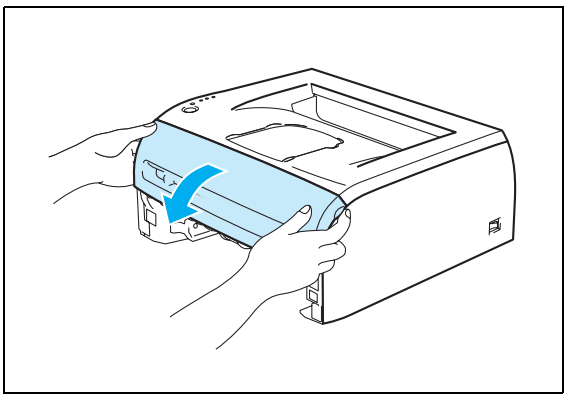
1. Pull the paper tray completely out of the printer.



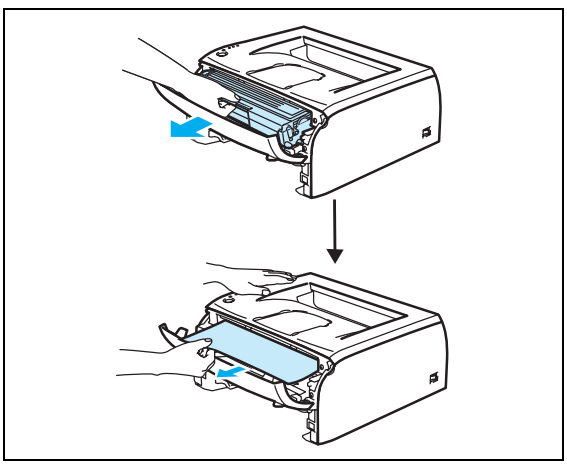
2 Pull the jammed paper up and out of the printer.



3 Open the front cover.

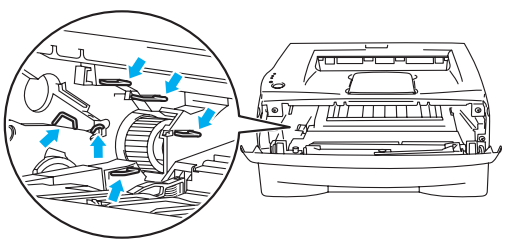


4 Pull out the drum unit and toner cartridge assembly slowly. The jammed paper will be pulled out with the drum unit and toner cartridge assembly.

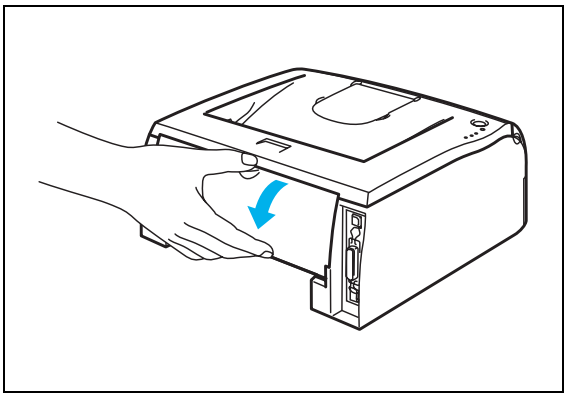


CAUTION

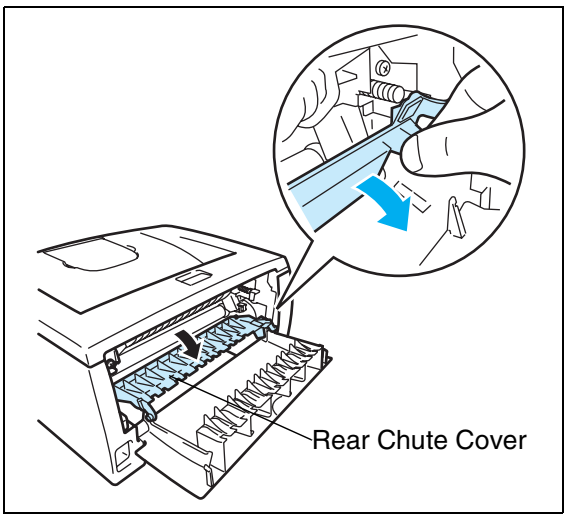
To prevent damage to the printer caused by static electricity, do not touch the electrodes shown in the illustrations.



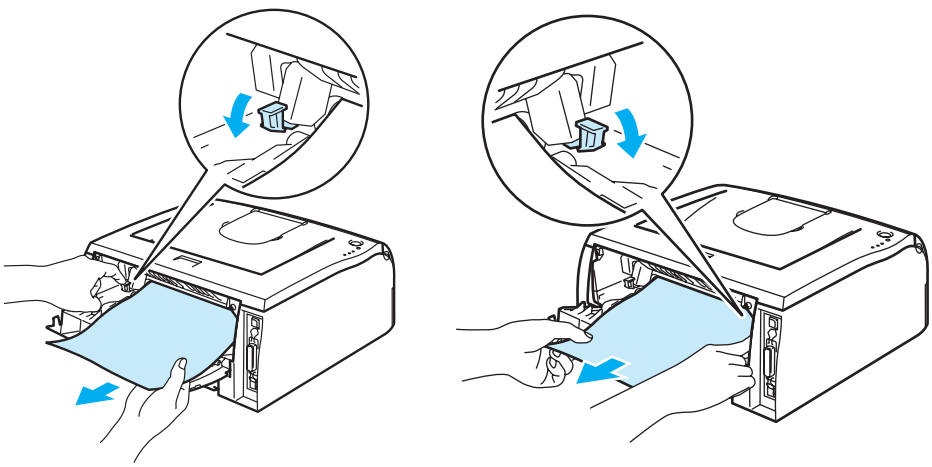
5 Open the back cover.



6 Pull the tab toward you to open the rear chute cover.

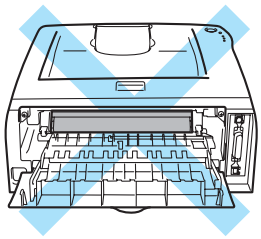


7 Pull the jammed paper out of the fuser unit. If the jammed paper cannot be pulled out easily, push down the tab with one hand as you gently pull the paper out with other.



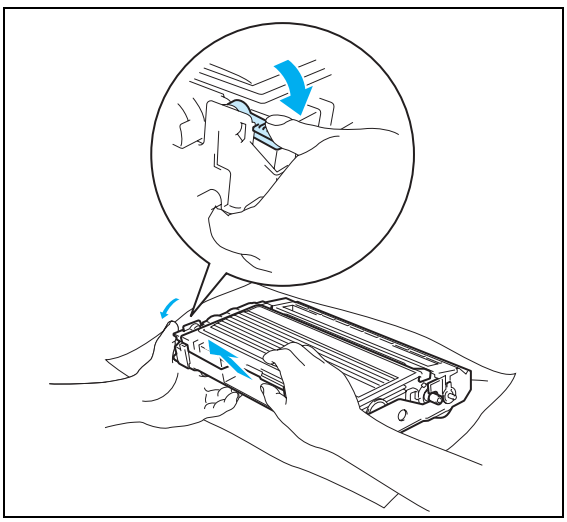
HOT SURFACE

After you have just used the printer, some internal parts of the printer are extremely hot! Wait for the printer to cool down before you touch the internal parts of the printer.

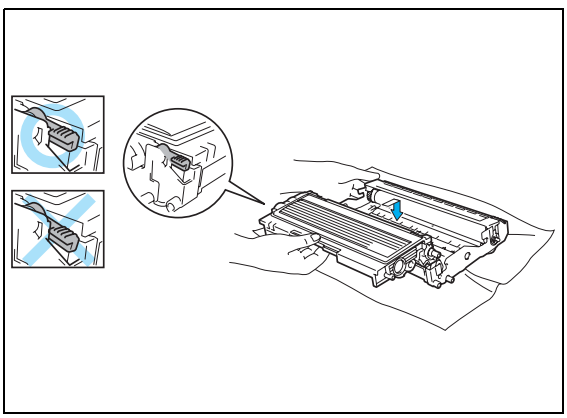


8. Close the back cover.

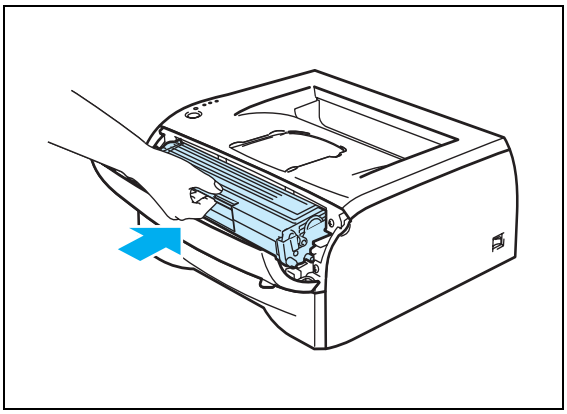
9. Push the lock lever down and take the toner cartridge out of the drum unit. Take out the jammed paper if there is any inside the drum unit.



10. Put the toner cartridge back into the drum unit until you hear it lock into place. If you put it in properly, the lock lever will lift automatically.



⓫ Put the drum unit and toner cartridge assembly back in the printer.



⓬ Put the paper tray firmly back in the printer.

⓭ Close the front cover.

⓮ Make sure that the **Paper** LED is now off and the printer is ready.

Other problems

Problem	Recommendation
The printer cannot print. **There was an error writing to LPT1: (or BRUSB) for the printer** error message occurs on your PC.	■ Check that the printer cable is not damaged or broken. ■ If you have an interface-switching device, make sure the correct printer is selected.

For Macintosh® with USB

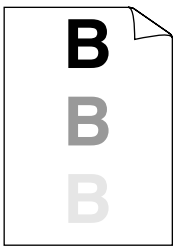
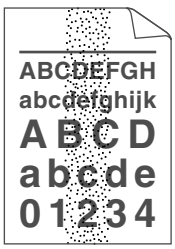
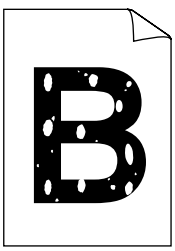
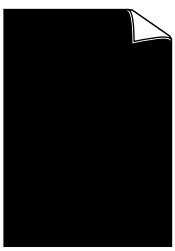
Problem	Recommendation
The printer does not appear in **Chooser** (Mac OS® 9.1 to 9.2) or **Print Center** (Mac OS® X 10.2.4 or greater).	■ Check that the printer is turned on. ■ Check that the USB interface cable is connected correctly. ■ Check the printer driver is installed correctly.
Unable to print from application software.	■ Make sure that the supplied Macintosh® printer driver is installed in the **Hard Disk** and that it is selected with **Chooser** (Mac OS® 9.1 to 9.2) or **Print Center** (Mac OS® X 10.2.4 or greater).

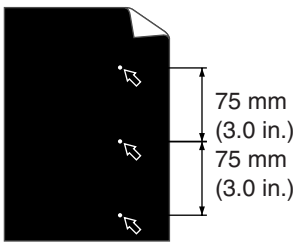
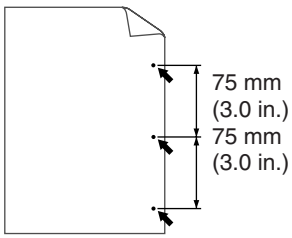
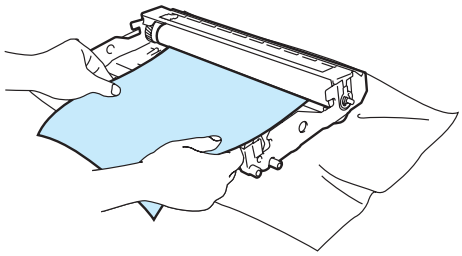
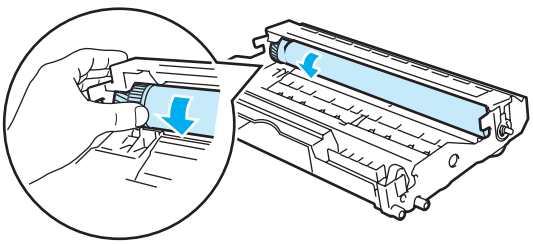
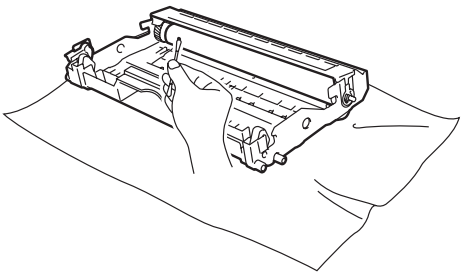
Improving the print quality

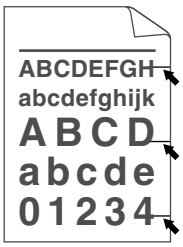
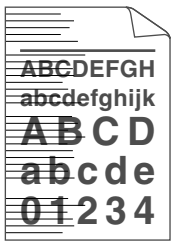
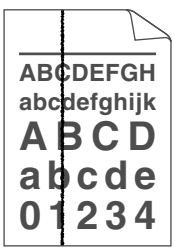
If you have a print quality problem, print a test page first (see *page 3-8*). If the printout looks good, the problem is probably not the printer. Check the interface cable or try the printer on another PC.

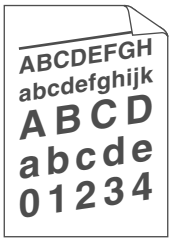
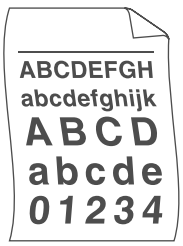
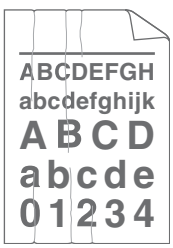
This section provides information on the following topics:

Examples of poor print quality	Recommendation
 Faint	■ Check the printer's environment. Conditions such as humidity, high temperatures, and so on may cause this print fault. See *Positioning the printer* on page 1-3. ■ If the whole page is too light, **Toner Save** mode may be on. Turn off **Toner Save** mode in the printer Properties tab of the driver. ■ Try installing a new toner cartridge. See *Replacing the toner cartridge* on page 5-3. ■ Try installing a new drum unit. See *Replacing the drum unit* on page 5-8.

Examples of poor print quality	Recommendation
 Gray background	■ Make sure that you use paper that meets the recommended specifications. See *What kind of paper can I use?* on page 1-4 ■ Check the printer's environment - high temperatures and high humidity can increase the amount of background shading. See *Positioning the printer* on page 1-3. ■ Use a new toner cartridge. See *Replacing the toner cartridge* on page 5-3 ■ Use a new drum unit. See *Replacing the drum unit* on page 5-8.
 **Ghost**	■ Make sure you use paper that meets our specifications. Rough-surfaced paper or thick print media may cause this problem. See *What kind of paper can I use?* on page 1-4. ■ Make sure that you choose the appropriate media type in the printer driver. See *What kind of paper can I use?* on page 1-4. ■ Try using a new drum unit. See *Replacing the drum unit* on page 5-8.
 **Toner specks**	■ Make sure that you use paper that meets our specifications. Rough-surfaced paper may cause the problem. See *What kind of paper can I use?* on page 1-4. ■ The drum unit may be damaged. Put in a new drum unit. See *Replacing the drum unit* on page 5-8.
 **Hollow print**	■ Make sure that you use paper that meets our specifications. See *What kind of paper can I use?* on page 1-4 ■ Choose **Thick paper** mode in the printer driver, or use thinner paper than you are currently using. ■ Check the printer's environment because conditions such as high humidity can cause hollow print. See *Positioning the printer* on page 1-3.
 **All black**	■ Clean the primary corona wire inside the drum unit by sliding the blue tab. Make sure you return the blue tab to the home position (▲). See *Cleaning the corona wire* on page 5-14. ■ The drum unit may be damaged. Put in a new drum unit. See *Replacing the drum unit* on page 5-8.

Examples of poor print quality	Recommendation
 **White Spots on black text and graphics at 75 mm (3.0 in.) intervals**  **Black Spots at 75 mm (3.0 in.) intervals**	■ If the problem is not solved after printing a few pages, the drum unit may have glue from label stock on the OPC drum surface. Clean the drum unit as follows: 1 Position the print sample in front of the drum unit, and find the exact position of the poor print.  2 Turn the drum unit gear by hand while looking at the surface of the OPC drum.  3 When you have located the mark on the drum that matches the print sample, wipe the surface of the OPC drum with a cotton swab until the dust or paper powder on the surface comes off.  **Note** Do not try to clean the surface of the photosensitive drum with a sharp object. ■ The drum unit may be damaged. Put in a new drum unit. See *Replacing the drum unit* on page 5-8.

Examples of poor print quality	Recommendation
 **Black toner marks across the page**	■ The drum unit may be damaged. Put in a new drum unit. See *page 6-12*. ■ Make sure that you use paper that meets our specifications. See *What kind of paper can I use?* on page 1-4. • If you use label sheets for laser printers, the glue from the sheets may sometimes stick to the OPC drum surface. Clean the drum unit. See *page 6-12*. • Do not use paper that has clips or staples because they will scratch the surface of the drum. • If the unpacked drum unit is in direct sunlight or room light, the unit may be damaged.
 White lines across the page	■ Make sure that you use paper that meets our specifications. A rough surfaced paper or thick print media can cause the problem. ■ Make sure that you select the appropriate media type in the printer driver. ■ The problem may disappear by itself. Try printing multiple pages to clear this problem, especially if the printer has not been used for a long time. ■ The drum unit may be damaged. Put in a new drum unit. See *Replacing the toner cartridge* on page 5-3.
 **Lines across the page**	■ Clean the inside of the printer and the primary corona wire in the drum unit. See *Cleaning* on page 5-11. ■ The drum unit may be damaged. Put in a new drum unit. See *Replacing the drum unit* on page 5-8.
 **Black lines down the page** Printed pages have toner stains down the page.	■ Clean the primary corona wire of the drum unit. See *Cleaning the corona wire* on page 5-14 ■ Make sure the primary corona wire cleaner is at the home position (▲). ■ The drum unit may be damaged. Install a new drum unit. See *Replacing the drum unit* on page 5-8. ■ The toner cartridge may be damaged. Put in a new toner cartridge. See *Replacing the toner cartridge* on page 5-3. Make sure that a torn piece of paper is not inside the printer covering the scanner window. ■ The fuser unit may be smudged. Call your dealer or Brother Customer Service.

Examples of poor print quality	Recommendation
 White lines down the page	■ Wipe the scanner window with a soft cloth. See *Cleaning the inside of the printer* on page 5-12. ■ The toner cartridge may be damaged. Put in a new toner cartridge. See *Replacing the toner cartridge* on page 5-3.
 **Page skewed**	■ Make sure the paper or other print media is loaded properly in the paper tray and that the guides are not too tight or too loose against the paper stack. ■ Set the paper guides correctly. See *Printing on plain paper, bond paper or transparencies from the paper tray* on page 1-7. ■ If you are using the manual feed slot, See *Printing on plain paper, bond paper or transparencies from the manual feed slot* on page 1-10. ■ The paper tray may be too full. See *Printing on plain paper, bond paper or transparencies from the paper tray* on page 1-7. ■ Check the paper type and quality. See *What kind of paper can I use?* on page 1-4.
 **Curl or wave**	■ Check the paper type and quality. High temperatures and high humidity will cause paper to curl. See *What kind of paper can I use?* on page 1-4. ■ If you don't use the printer very often, the paper may have been in the paper tray too long. Turn over the stack of paper in the paper tray. Also, try fanning the paper stack and then rotating the paper 180° in the paper tray.
 **Wrinkles or creases**	■ Make sure that paper is loaded properly. See *Printing on plain paper, bond paper or transparencies from the paper tray* on page 1-7. ■ Check the paper type and quality. See *What kind of paper can I use?* on page 1-4. ■ Turn over the stack of paper in the tray or try rotating the paper 180° in the input tray.

Solving print problems

Problem	Recommendation
The printer prints unexpectedly or it prints garbage data.	■ Make sure the printer cable is not too long. We recommend you use a parallel or USB cable that is less than 2 meters (6.5 feet) in length. ■ Make sure that the printer cable is not damaged or broken. ■ If you are using an interface-switching device, remove it. Connect your computer directly to your printer, and then try again. ■ Check that you have chosen the appropriate printer driver with 'Set as Default'. ■ Make sure that the printer is not connected to the same port that is also connected to a storage device or scanner. Take away all other devices and connect the port only to the printer. ■ Turn off Printer Status Monitor in the **Device Options** tab in the printer driver.
The printer cannot print full pages of a document. An error message **MEMORY FULL** is printed out.	■ Press the **Go** button to print the data left in the printer. Cancel the print job if you want to delete the data remaining in the printer, see *Cancel printing* on page 3-7. ■ Reduce the print resolution or reduce the complexity of your document.
The printer cannot print full pages of a document. An error message **PRINT OVERRUN** is printed out.	■ Press the **Go** button to print the data left in the printer. Cancel the print job if you want to delete the data remaining in the printer, see *Cancel printing* on page 3-7. ■ If this does not clear the error, reduce the complexity of your document or reduce the print resolution. ■ Set page protection to **AUTO** by using the supplied Windows® driver. ■ Change the following settings in the supplied Windows® driver, and then try again. The best combination of the settings below will vary depending on your document: • Graphics mode • TrueType mode • Use printer TrueType® fonts
My headers or footers appear when I view my document on the screen but they do not show up when I print it.	■ Adjust the top and bottom margins of your document.

A Appendix

Printer specifications

Engine

Model		HL-2030	HL-2040	HL-2070N
Technology		Electrophotographic		
Print speed		Up to 17 ppm (Letter size) Up to 16 ppm (A4 size)	Up to 20 ppm (Letter size) Up to 20 ppm (A4 size)	
First print time		Less than 10 sec*1		
Resolution	Windows® 95 and Windows NT® 4.0	N/A	HQ1200 600 dpi 300 dpi	
	Windows® 98/Me, Windows® 2000/XP	HQ1200 600 dpi 300 dpi		
	DOS	N/A		600 dpi
	Mac OS®	HQ1200 600 dpi 300 dpi		
	Linux	600 dpi 300 dpi		

*1 From paper tray

Controller

Model			HL-2030	HL-2040	HL-2070N
Processor			Fujitsu SPARClite 96MHz		Fujitsu SPARClite 133MHz
Memory	Standard		8 MB		16 MB
	Option		N/A		
Interface	Standard		Full-Speed USB 2.0*2	Full-Speed USB 2.0*2, IEEE 1284 Parallel	Full-Speed USB 2.0*2, IEEE 1284 Parallel, 10/100BASE-TX
	Option		IEEE 802.11b wireless (NC-2200w)	IEEE 802.11b wireless (NC-2200w) 10/100BASE-TX (NC-2100p)	IEEE 802.11b wireless (NC-2200w)
Network Connectivity	Protocols	10/100BASE-TX	N/A		TCP/IP
		NC-2200w	TCP/IP		
		NC-2100p	N/A	TCP/IP, NetBEUI	N/A
	Management tool		N/A		BRAdmin Professional*3 Web Based Management*4
Emulation			GDI		PCL6, Epson FX-850, IBM ProPrinter XL
Resident fonts			N/A		49 scalable fonts, 12 bitmap fonts, 11 bar codes*5

*2 USB is not supported under Windows® 95 or Windows NT®4.0.
*3 Brother original Windows® management utility
*4 Use a standard web browser to manage the device.
*5 Code39, Interleaved 2 of 5, EAN-8, EAN-13, UPC-A, UPC-E, EAN-128, Codabar, FIM (US-PostNet), ISBN, Code128

Software

Model	HL-2030	HL-2040	HL-2070N
Printer driver	GDI Driver for Windows® 98/Me, Windows® 2000/XP	GDI Driver for Windows® 95/98/Me, Windows NT® 4.0, Windows® 2000/XP	PCL Driver for Windows® 95/98/Me, Windows NT® 4.0, Windows® 2000/XP
	N/A		Generic PCL Driver for Windows NT® 4.0, Windows® 2000/XP
	Brother Laser Driver for Mac OS® 9.1 to 9.2 and Mac OS® X 10.2.4 or greater		
	GDI Printer Driver for Linux		
Utilities	Interactive Help*6		Interactive Help*6 Driver Deployment Wizard*7

Control panel

Model	HL-2030	HL-2040	HL-2070N
LED	4 LEDs		
Button	1 button		

Paper handling

Model		HL-2030	HL-2040	HL-2070N
Paper Input*8	Manual feed slot	1 Sheet		
	Paper tray	250 Sheets		
Paper Output*8	Face-down	100 Sheets		
Duplex		Manual Duplex		

*6 Instructional animations for problem solving
*7 The Driver Deployment Wizard automates the installation of a printer in a peer-to-peer network.
*8 Calculated with 80 g/m^2 (21 lb) paper

Media specifications

Model		HL-2030	HL-2040	HL-2070N
Media types	Manual feed slot	Plain paper, Bond paper, Recycled paper, Envelope, Labels, and Transparencies		
	Paper tray	Plain paper, Bond paper, Recycled paper, and Transparencies*9		
Media weights	Manual feed slot	60 to 161 g/m^2 (16 to 43 lb)		
	Paper tray	60 to 105 g/m^2 (16 to 28 lb)		
Media sizes	Manual feed slot	Width: 69.9 to 215.9 mm (2.75 to 8.5 in.) Length: 116 to 406.4 mm (4.57 to 16 in.)		
	Paper tray	A4, Letter, Legal*10, B5(JIS), B5(ISO), Executive, A5, A6, B6(ISO)		

Supplies

Model		HL-2030	HL-2040	HL-2070N
Toner	Starter*11	1,500 pages A4/Letter pages @5% coverage		
	Standard	2,500 pages A4/Letter pages @5% coverage		
Drum		12,000 A4/Letter pages (1 page / job)		

Dimensions / Weights

Model	HL-2030	HL-2040	HL-2070N
Dimensions (W × D × H)	371 × 361 × 165.5 mm (14.6 × 14.2 × 6.5 in.)		
Weights	Approx.5.4 kg (12.0 lb) not including the drum unit and toner cartridge Approx.6.5 kg (14.3 lb) including the drum unit and toner cartridge		

*9 Up to 10 sheets
*10 Legal paper is not available in some regions.
*11 Depends on the model and country you bought the printer in.

Other

Model			HL-2030	HL-2040	HL-2070N
Power consumption		Printing (average)	Less than 450 W at 25 °C (77 °F)		
		Standby (average)	Less than 70 W at 25 °C (77 °F)		
		Sleep (average)	Less than 5 W		Less than 7 W
Noise level	Sound pressure	Printing	Less than 51 dB(A)		
		Standby	Less than 30 dB(A)		
	Sound power	Printing	6.2B(A) (Office equipment with LWAd > 6.3B(A) is not suitable for operation in rooms where predominantly intellectual work is done. Due to their noise emissions, these devices should be set up in separate rooms.)		
		Standby	4.3B(A)		
Ecology	Power save		Yes		
	Toner save		Yes		

System Requirements

Computer Platform & Operating System Version		Processor Speed	Minimum RAM	Recommended RAM	Available Hard Disk Space
Windows®	95*12, 98, 98SE	486/66 MHz	8 MB	16 MB	40 MB
	NT® Workstation 4.0*12	Pentium 75 MHz	16 MB	32 MB	50 MB
	2000 Professional	Pentium 133 MHz	64 MB	128 MB	50 MB
	Me	Pentium 150 MHz	32 MB	64 MB	50 MB
	XP	Pentium 300 MHz	128 MB	128 MB	50 MB
Apple® Macintosh®*13	OS® 9.1 - 9.2	All base models meet minimum requirements	32 MB	64 MB	50 MB
	Mac OS® X 10.2.4 or greater		128 MB	160 MB	

*12 USB is not supported under Windows® 95 or Windows NT®4.0.
*13 Power Macintosh with an Apple original pre-installed USB port.

Important information for choosing your paper

This section provides information to help you choose paper to use with this printer.

Note

If you use paper other than the ones recommended, a paper jam or misfeeding may occur in the printer. See *Recommended paper* on page 1-5.

Before you purchase a large quantity of paper

Make sure the paper is suitable for the printer.

Paper for plain paper copies

Paper is divided by usage, such as paper for printing and paper for copying. The usage is usually specified on the paper's package. Check the package to see whether it is suitable for laser printers. Use paper that is suitable for laser printers.

Basis weight

The basis weight of the paper in general use varies in different countries. We recommend that you use paper that weighs between 75 and 90 g/m^2 (20 and 24 lb), although this printer is able to cope with thinner or thicker paper than these weights.

Unit	Europe	USA
g/m^2	80 to 90	75 to 90
lb		20 to 24

Long grain and short grain

The pulp fiber of the paper is aligned during paper manufacturing. What we call long grain paper is paper where the fiber is parallel to the paper carriage direction of the paper.

Paper can be classified into two types, long grain and short grain. Long grain paper's fiber direction is parallel to the carriage direction of the paper in the printer. Short grain paper's fiber direction is vertical to the carriage direction of the paper in the printer. Though most plain paper for copying is long grain, some is short grain. We recommend that you use long grain paper for this printer. Short grain paper is too weak for the paper carriage of the printer.

Acid paper and neutralized paper

Paper can be classified as either acid paper or neutralized paper.

Though modern paper manufacture methods started with acid paper, recently neutralized paper is taking the place of acid paper because of environment or preservation issues.

However, many forms of acid paper can be found in recycled paper. We recommend that you use neutralized paper for this printer.

You can use an acid paper check pen to distinguish acid paper from neutral paper.

Print surface

The characteristics may differ a little between the face side and reverse side of a sheet of paper.

Usually, the opening side of the ream of paper package is the print side. Follow any indication of the print side on the paper package. Typically, the print side is indicated by an arrow.

Moisture content

Moisture content is the amount of water left in the paper after manufacture. It is one of the important characteristics of the paper. This can change greatly depending on the storage environment, although usually paper contains about 5% water by weight. Because paper often absorbs water, the amount of water can sometimes be about 10% in a high humidity environment. When the amount of water increases, the characteristic of the paper changes greatly. The fixing of the toner may become worse. For storage of the paper and during use, we recommend that the humidity of the surrounding environment is between 50% and 60%.

Rough estimate of basis weight

g/m^2	**lb**	
	Bond	**Index**
60	16	
64	17	
75	20	
90	24	
105	28	
120	32	
135	36	
161	43	90
200	53	110

Paper size

Paper size	mm	in.
Letter		8.5 × 11 in.
Legal		8.5 × 14 in.
Executive		7.25 × 10.5 in.
A4	210 × 297 mm	
A5	148 × 210 mm	
A6	105 × 148 mm	
Envelope Monarch		3.875 × 7.5 in.
Envelope #9		3.875 × 8.9 in.
Envelope #10		4.12 × 9.5 in.
Envelope #11		4.5 × 10.375 in.
Envelope DL	110 × 220 mm	
Envelope C5	162 × 229 mm	
Envelope C6	114 × 162 mm	
B5 (JIS)	182 × 257 mm	
B5 (ISO)	176 × 250 mm	
B6	125 × 176 mm	
Folio		8.5 × 13 in.

Symbol and character sets (For HL-2070N)

For the HP LaserJet, IBM Proprinter XL, and EPSON FX-850 emulation modes, you can select the symbol and character sets using a Web browser or the Remote Printer Console software.

How to use the Web browser

To use the Web browser, follow the steps below.

1. Type `http://printer's IP address/` into your browser.
   For example: `http://192.168.1.2/` (if the printer's IP address is 192.168.1.2)
2. Click **Printer Settings**.
3. Enter a user name and a password. The default User Name is `admin` and the default Password is `access`.
4. Click **OK**.
5. Select the **HP LaserJet**, **IBM Proprinter XL** or **EPSON FX-850** tab and click **Font Setup**.
6. Select a symbol set you want to use from the **Symbol Set** list box.

How to use the Remote Printer Console

To use the Remote Printer Console software, follow the steps below.

For Windows®

1. Insert the CD-ROM into your CD-ROM drive and close the opening screen when it appears.
2. Open Windows® Explore and select the CD-ROM drive.
3. Double-click the **RPC** folder.
4. Refer to the **RPC_User's_Guide.pdf** for how to install and use the Remote Printer Console.

For Macintosh®

1. Insert the CD-ROM into your CD-ROM drive. Double-click the **HL2000** icon on the desktop.
2. Double-click the **RPC** folder.
3. Refer to the **RPC_User's_Guide.pdf** for how to install and use the Remote Printer Console.

Symbol and character sets list

OCR symbol sets

When you choose the OCR-A or OCR-B font, the matching symbol set is always used.

OCR A (0O)

OCR B (1O)

HP LaserJet mode

ABICOMP Brazil / Portugal (13P)
ABICOMP International (14P)
Desktop (7J)
Greek8 (8G)
HP German (0G)
HP Spanish (1S)
ISO Latin1 (0N)
ISO Latin2 (2N)
ISO Latin5 (5N)
ISO Latin6 (6N)
ISO2 IRV (2U)
ISO4 UK (1E)
ISO5 ASCII (0U)
ISO10 Swedish (3S)
ISO11 Swedish (0S)
ISO14 JIS ASCII (0K)
ISO15 Italian (0I)
ISO16 Portuguese (4S)
ISO17 Spanish (2S)
ISO21 German (1G)
ISO25 French (0F)
ISO57 Chinese (2K)
ISO60 Norwegian1 (0D)
ISO61 Norwegian2 (1D)
ISO69 French (1F)
ISO84 Portuguese (5S)
ISO85 Spanish (6S)
ISO8859 / 7 Latin / Greek (12N)
ISO8859 / 15 Latin (9N)
ISO8859 / 15 Latin / Cyrillic (10N)
Legal (1U)
Math-8 (8M)
MC Text (12J)
MS Publishing (6J)
PC8 (10U)
PC8 Bulgarian (13R)
PC8 D/N (11U)
PC8 Greek Alternate (437G) (14G)
PC8 Latin / Greek (12G)
PC8 PC Nova (27Q)
PC8 Turkish (9T)
PC775 (26U)
PC850 Multilingual (12U)
PC851 Greece (10G)
PC852 East Europe (17U)
PC853 Latin3 (Turkish) (18U)
PC855 Cyrillic (10R)
PC857 Latin5 (Turkish) (16U)
PC858 Multilingual Euro (13U)
PC860 Portugal (20U)
PC861 Iceland (21U)
PC863 Canadian French (23U)
PC865 Nordic (25U)
PC866 Cyrillic (3R)
PC869 Greece (11G)
PC1004 (9J)
Pi Font (15U)
PS Math (5M)
PS Text (10J)
Roman8 (8U)
Roman9 (4U)
Roman Extension (0E)
Russian-GOST (12R)
Symbol (19M)
Turkish8 (8T)
Ukrainian (14R)
Ventura Math (6M)
Ventura Intl (13J)
Ventura US (14J)
Windows 3.0 (9U)

Windows Baltic (19L)
Windows Cyrillic (9R)
Windows Greek (9G)
Windows Latin1 (19U)
Windows Latin2 (9E)
Windows Latin5 (5T)
Wingdings (579L)

IBM mode

PC8
PC8 D/N
PC8 Turkish
PC850 Multilingual
PC852 East Europe
PC860 Portugal
PC863 Canadian French
PC865 Nordic

Epson mode

Danish I
Danish II
Dutch
French I
French II
German
Italian
Norwegian
Japanese
PC8
PC8 D/N
PC8 Turkish
PC850 Multilingual
PC852 East Europe
PC860 Portugal
PC863 Canadian French
PC865 Nordic
South African
Spanish
Swedish
UK ASCII I
UK ASCII II
US ASCII

B Appendix (For Europe and Other Countries)

Brother Numbers

IMPORTANT: For technical and operational help, you must call the country where you bought the printer. Calls must be made *from within* that country.

Register your product

By registering your Brother product, you will be recorded as the original owner of the product.

Your registration with Brother:

- may serve as a confirmation of the purchase date of your product should you lose your receipt;
- may support an insurance claim by you in the event of product loss covered by insurance; and,
- will help us to notify you of enhancements to your product and special offers.

Please complete the Brother Warranty Registration or, for your convenience and most efficient way to register your new product, register on-line at

http://www.brother.com/registration/

Frequently asked questions (FAQs)

The Brother Solutions Center is our one-stop resource for all your Printer needs. You can download the latest drivers, software and utilities, read FAQs and troubleshooting tips to learn how to get the most from your Brother product.

http://solutions.brother.com

You can check here for the Brother driver updates.

Customer Service

Visit http://www.brother.com for contact information on your local Brother office.

Service center locations

For service centres in Europe, contact your local Brother Office. Address and telephone contact information for European offices can be found at http://www.brother.com and select your country.

Internet Addresses

Brother Global Web Site: http://www.brother.com

For Frequently Asked Questions (FAQs), Product Support and Technical Questions, and Driver Updates and Utilities: http://solutions.brother.com

Important information: Regulations

Radio interference (220 to 240 volt model only)

This printer follows EN55022 (CISPR Publication 22)/Class B.

Before you use this product, make sure that you use the following interface cables.

1. A shielded parallel interface cable with twisted-pair conductors and that it is marked "IEEE 1284 compliant".
2. A USB cable.

The cable must not be more than 2 meters long.

International ENERGY STAR® Compliance Statement

The purpose of the International ENERGY STAR® Program is to promote the development and popularization of energy-efficient office equipment.

As an ENERGY STAR® Partner, Brother Industries, Ltd. has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

IEC 60825-1 specification (220 to 240 volt model only)

This printer is a Class 1 laser product as defined in IEC 60825-1 specifications. The label shown below is attached in countries where it is needed.

This printer has a Class 3B laser diode which produces invisible laser radiation in the scanner unit. You should not open the scanner unit under any circumstances.

Caution: Use of controls or adjustments or performance of procedures other than those specified in this User's Guide may result in hazardous radiation exposure.

Internal laser radiation

Maximum radiation power:5 mW
Wave length:770 - 810 nm
Laser class:Class 3B

IMPORTANT - For Your Safety

To ensure safe operation the supplied three-pin plug must be inserted only into a standard three-pin power outlet that is properly grounded through the standard electrical wiring.

Extension cords used with this printer must be three-pin plug type and correctly wired to provide proper grounding. Incorrectly wired extension cords may cause personal injury and equipment damage.

The fact that the equipment operates satisfactorily does not imply that the power is grounded and that the installation is completely safe. For your safety, if in any doubt about the effective grounding of the power, call a qualified electrician.

Disconnect device

You must install this printer near a power outlet that is easily accessible. In case of an emergency, you must disconnect the power cord from the power outlet to shut off the power completely.

Caution for LAN connection (For model HL-2070N only)

Connect this product to a LAN connection that is not subjected to overvoltages.

EC Declaration of Conformity

Manufacturer
Brother Industries Ltd.,
15-1, Naeshiro-cho, Mizuho-ku,
Nagoya 467-8561, Japan

Plant
Brother Corporation (Asia) Ltd.,
Brother Buji Nan Ling Factory,
Gold Garden Ind., Nan Ling Village,
Buji, Rong Gang, Shenzhen, China

Herewith declare that:

Products description : **Laser Printer**
Product Name : **HL-2030, HL-2040, HL-2070N**
Model Number : **HL-20**

are in conformity with provisions of the Directives applied : Low Voltage Directive 73/23/EEC (as amended by 93/68/EEC) and the Electromagnetic Compatibility Directive 89/336/EEC (as amended by 91/263/EEC and 92/31/EEC and 93/68/EEC).

Harmonized standards applied :

Safety : EN60950:2000

EMC : EN55022:1998 Class B
EN55024:1998 + A1:2001
EN61000-3-2:2000
EN61000-3-3:1995 + A1:2001

Year in which CE marking was first affixed : 2004

Issued by : Brother Industries, Ltd.

Date : 29th June, 2004

Place : Nagoya, Japan

Signature :

Takashi Maeda

Takashi Maeda
Manager
Quality Management Group
Quality Management Dept.
Information & Document Company

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